TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Texas Surface Water Quality Standards

§§307.1-307.10

Adopted by the Commission: March 19, 1997
Effective: April 30, 1997

Effective: April 30, 1997

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
Permanent Rule Change

Rule Log Number 96138-307-WT

CHAPTER 307 - TEXAS SURFACE WATER QUALITY STANDARDS

§307.4, §307.10

1. Purpose. This change transmittal provides the page(s) that reflect changes and additions to the Texas Natural Resource Conservation Commission (commission) Volume of Permanent Rules.

2. Explanation of Change. The commission adopted amendments to §307.4 and §307.10, with changes to the proposed text as published in the October 11, 1996 issue of the Texas Register (21 TexReg 9765).

3. Effect of Change. The Texas Surface Water Quality Standards are established and reviewed on a periodic basis pursuant to the Texas Water Code, §26.023, as amended, and the Federal Water Pollution Control Act (Clean Water Act), §303(c), as amended. The surface water quality standards were last amended on July 13, 1995. The revisions adopted at this time are both substantive and editorial. As substantive changes, the presumed standard for unclassified perennial streams in East Texas is changed from "intermediate aquatic life" to "high aquatic life" in §307.4(h)(1), and site-specific standards are designated for 35 additional streams in Appendix D of §307.10. "High aquatic life" requires an instream dissolved oxygen concentration of 5 milligrams per liter, while "intermediate aquatic life" requires an instream dissolved concentration of 4 milligrams per liter.

HISTORY PAGE

CHAPTER 307 - TEXAS SURFACE WATER QUALITY STANDARDS

Adoption of amendments to §§307.2-307.10
Date Adopted: June 14, 1995
Date Filed with the Secretary of State: June 22, 1995
Date Effective: July 13, 1995

Rule Log Number 96138-307-WT
Amendments to: §307.4, §307.10
Date Adopted: March 19, 1997
Date Filed with the Secretary of State: April 9, 1997
Published: April 25, 1997
Date Effective: April 30, 1997

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Effective April 30, 1997
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§307.1. General Policy Statement.

It is the policy of this state and the purpose of this chapter to maintain the quality of water in the state consistent with public health and enjoyment, propagation and protection of terrestrial and aquatic life, operation of existing industries, and economic development of the state; to encourage and promote development and use of regional and area-wide wastewater collection, treatment, and disposal systems to serve the wastewater disposal needs of the citizens of the state; and to require the use of all reasonable methods to implement this policy.

§307.2. Description of Standards.

(a) Contents of the Texas Surface Water Quality Standards.

(1) Section 307.1 of this title (relating to General Policy Statement) contains the general standards policy of the commission.

(2) Section 307.2 lists the major sections of the standards, defines basin classification categories, and describes justifications for standards modifications.

(3) Section 307.3 of this title (relating to Definitions and Abbreviations) defines terms and abbreviations used in the standards.

(4) Section 307.4 of this title (relating to General Criteria) lists the general criteria, which are applicable to all surface waters of the state unless specifically excepted in §307.8 of this title (relating to Application of Standards) or §307.9 of this title (relating to Determination of Standards Attainment).

(5) Section 307.5 of this title (relating to Antidegradation) describes the antidegradation policy and implementation procedures.

(6) Section 307.6 of this title (relating to Toxic Materials) establishes criteria and control procedures for specific toxic substances and total toxicity.

(7) Section 307.7 of this title (relating to Site-specific Uses and Criteria) defines appropriate water uses and supporting criteria for site-specific standards.

(8) Section 307.8 of this title (relating to Application of Standards) sets forth conditions under which portions of the standards do not apply--such as in mixing zones or below critical low-flows.

(9) Section 307.9 of this title (relating to Determination of Standards Attainment) describes sampling and analytical procedures to determine standards attainment.

(10) Section 307.10 of this title (relating to Appendices A - E) lists site-specific standards and supporting information for classified segments (Appendices A through C), partially classified waterbodies (Appendix D), and site-specific criteria that may be derived for any waters in the state (Appendix E). Specific appendices are as follows:

(A) Appendix A - Water Uses and Numerical Criteria

(B) Appendix B - Low-Flow Criteria

(C) Appendix C - Segment Descriptions

(D) Appendix D - Site-specific Receiving Water Assessments

(E) Appendix E - Site-specific Criteria

(b) Applicability. The Texas Surface Water Quality Standards apply to surface waters in the state--including wetlands.

(c) Classification of surface waters. The major surface waters of the state are classified as segments for purposes of water quality management and designation of site-specific standards. Classified segments are aggregated by basin, and basins are categorized as follows:

(1) River basin waters. Surface inland waters comprising the major rivers, their tributaries, including listed impounded waters, and the tidal portion of rivers to the extent that they are confined in channels.

(2) Coastal basin waters. Surface inland waters, including listed impounded waters but exclusive of paragraph (1) of this subsection, discharging, flowing, or otherwise communicating with bays or the gulf, including the tidal portion of streams to the extent that they are confined in channels.

(3) Bay waters. All tidal waters, exclusive of those included in river basin waters, coastal basin waters, and gulf waters.

(4) Gulf waters. Waters which are not included in or do not form a part of any bay or estuary but which are a part of the open waters of the Gulf of Mexico to the limit of the state's jurisdiction.

(d) Modification of standards.

(1) The commission reserves the right to amend these standards following the completion of special studies.

(2) Any errors in water quality standards resulting from clerical errors or errors in data may be corrected by the commission through amendment of the affected standards. Water quality standards not affected by such clerical errors or errors in data remain valid until changed by the commission.

(3) The narrative provisions, designated uses, and numerical criteria of the Texas Surface Water Quality Standards may be amended for a specific waterbody to account for local conditions. A site-specific standard is an explicit amendment to this title, §307 (relating to the Texas Surface Water Quality Standards), and adoption of a site-specific standard requires the procedures for public notice and hearing established under the Texas Water Code, §26.024 and §26.025. An amendment which establishes a site-specific standard will require a use-attainability analysis which demonstrates that reasonably attainable water-quality related uses will be protected. Upon adoption, site-specific amendments to the standards will be listed in §307.10 of this title.

(4) When preliminary evidence indicates that a site-specific standards amendment is appropriate, the commission may allow a temporary variance to the water quality standards. A temporary variance is only applicable to an existing discharge facility. A permittee may apply for a temporary variance prior to or during the permit application process. The temporary variance request shall be included in the public notice for the permit application, and the request may be considered in any public hearing on the permit application. The temporary variance must have the approval of the Texas Natural Resource Conservation Commission before issuance of a final permit. A temporary variance for an NPDES permit will also require approval by the U.S. Environmental Protection Agency. The permit shall contain interim limits based upon the variance approval, and final limits based upon existing water quality standards. A variance shall not exceed a time period of three years. A temporary variance may be extended to allow additional time for a site-specific standard to be adopted in this title. This extension can be granted only after a site-specific study that supports a standards change has been completed. If the commission adopts the proposed site-specific standard prior to the expiration of the variance period, then the permit may be amended to meet the revised water quality standards. If the commission does not adopt the proposed site-specific standard prior to the expiration of the variance period, then the final effluent limits based on existing water quality standards will remain in effect, but the permit may be amended to include a permit schedule to meet standards in accordance with subsection (f) of this section.

(5) Factors which may justify the development of site-specific standards are described in this title in §307.4 (relating to General Criteria), §307.6 (relating to Toxic Materials), §307.7 (relating to Site-specific Uses and Criteria), and §307.8 (relating to Application of Standards).

(e) Implementation procedures. Provisions for implementing the water quality standards are described in a document entitled *Implementation of the Texas Natural Resource Conservation Commission Standards via Permitting*.

(f) Permit schedules to meet standards. Upon permit amendment or permit renewal, the commission may establish interim discharge limits to allow a permittee time to modify effluent quality in order to attain final effluent limits. The duration of any interim limit may not be longer than three years from the effective date of the permit issuance. An interim limit may be extended to allow

additional time for a site-specific standard to be adopted in this title. This extension can be granted only after a site-specific study that supports a standards change has been completed, and the extension will only be granted for effluent limits that are affected by the site-specific standard under consideration.

Adopted June 14, 1995 Effective July 13, 1995

§307.3. Definitions and Abbreviations.

(a) Definitions. The following words and terms, when used in this chapter, shall have the defined meanings, unless the context clearly indicates otherwise:

(1) **Acute toxicity** - Toxicity which exerts a stimulus severe enough to rapidly induce an effect. The duration of exposure applicable to acute toxicity is typically 96 hours or less. Tests of total toxicity normally use lethality as the measure of acute impacts. (Direct thermal impacts are excluded from definitions of toxicity.)

(2) **Ambient** - Refers to the existing water quality in a particular waterbody.

(3) **Background** - Refers to the water quality in a particular waterbody that would occur if that waterbody were relatively unaffected by human activities.

(4) **Bedslope** - Stream gradient, or the extent of the drop in elevation encountered as the stream flows downhill. One measure of bedslope is the elevation decline in meters over the stream distance in kilometers.

(5) **Best management practice** - A practice or combination of practices determined to be the most practicable means of preventing or reducing, to a level compatible with water quality goals, the amount of pollution generated by point and nonpoint sources.

(6) **Bioaccumulative toxic** - A chemical which is taken up by aquatic organisms from water directly or through the consumption of food containing the chemicals.

(7) **Chronic toxicity** - Toxicity which continues for a long-term period after exposure to toxic substances. Chronic exposure produces sub-lethal effects, such as growth impairment and reduced reproductive success, but it may also produce lethality. The duration of exposure applicable to chronic toxicity is normally seven days or more.

(8) **Commission** - The Texas Natural Resource Conservation Commission.

(9) **Contact recreation** - Recreational activities involving a significant risk of ingestion of water, including wading by children, swimming, water skiing, diving, and surfing.

(10) **Criteria** - Water quality conditions which are to be met in order to support and protect desired uses.

(11) **Critical low-flow** - Low-flow condition (e.g., 7Q2 flow) below which some standards do not apply. The impacts of permitted discharges are analyzed at critical low-flow.

(12) **Discharge permit** - A permit issued by the state to discharge treated effluent or cooling water into waters of the state.

(13) **EC_{50}** - The concentration of a toxicant that produces an adverse effect on 50% of the organisms tested in a specified time period.

(14) **Effluent** - Wastewater discharged from any point source prior to entering a waterbody.

(15) **Epilimnion** - The upper mixed layer of a lake (including impoundments, ponds, and reservoirs).

(16) **Fecal coliform** - That portion of the coliform bacteria group which is present in the intestinal tracts and feces of warm-blooded animals.

(17) **Freshwaters** - Inland waters which exhibit no measurable elevation changes due to normal tides.

(18) **Halocline** - A vertical gradient in salinity under conditions of density stratification that is usually recognized as the point where salinity exhibits the greatest difference in the vertical direction.

(19) **Harmonic mean flow** - A measure of mean flow in a water course which is calculated by summing the reciprocals of the individual flow measurements, dividing this sum by the number of measurements, and then calculating the reciprocal of the resulting number.

(20) **Industrial cooling impoundments** - An impoundment which is owned or operated by, or in conjunction with, the water rights permittee, and which is designed and constructed for the primary purpose of reducing the temperature and removing heat from an industrial effluent.

(21) **Intermittent stream** - A stream which has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 ft^3/s is considered intermittent.

(22) **LC_{50}** - The concentration of a toxicant that is lethal (fatal) to 50% of the organisms tested in a specified time period.

(23) **Marine waters** - Coastal waters which have measurable elevation changes due to normal tides. Marine waters are considered to be saltwater for purposes of standards application. In the absence of tidal information, marine waters are generally considered to be coastal waters which typically have salinities of two parts per thousand or greater in a significant portion of the water column.

(24) **Method detection limit** - The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte. The method detection limit (MDL) is estimated in accordance with 40 CFR, 136, Appendix B.

(25) **Minimum analytical level** - The lowest concentration at which a particular substance can be quantitatively measured with a defined precision level, using approved analytical methods. The minimum analytical level is not the published method detection limit for an EPA-approved analytical method, which is based on laboratory analysis of the substance in reagent (distilled) water. The minimum analytical level is based on analyses of the analyte in the matrix of concern (i.e., wastewater effluents). The commission will establish general minimum analytical levels that will be applicable when information on matrix-specific minimum analytical levels is unavailable.

(26) **Mixing zone** - The area contiguous to a discharge where mixing with receiving waters takes place and which may not meet certain criteria applicable to the receiving water.

(27) **No significant aquatic life use** - The instream use that is typically assigned to a waterbody, such as an intermittent stream, which is not appropriate for an aquatic life use category of limited or greater. There can be some aquatic life present in a waterbody which is designated as having no significant aquatic life use. Basic water quality standards - such as the general criteria in §307.4 of this title, the numerical acute aquatic life criteria in §307.6(c) of this title, and the biomonitoring requirements to preclude acute toxicity to aquatic life in §307.6(e) of this title - apply to waterbodies with no significant aquatic life use.

(28) **Noncontact recreation** - Recreational pursuits not involving a significant risk of water ingestion, including fishing, commercial and recreational boating, and limited body contact incidental to shoreline activity.

(29) **Nonpersistent toxic** - A toxic substance that readily degrades in the aquatic environment, exhibits a half-life of less than 96 hours, and does not have a tendency to accumulate in organisms.

(30) **Oyster waters** - Waters producing edible species of clams, oysters, or mussels.

(31) **Persistent toxic** - A toxic substance that is not readily degraded and exhibits a half-life of 96 hours or more in an aquatic environment.

(32) **Salinity** - The total dissolved solids in water after all carbonates have been converted to oxides, all bromide and iodide have been replaced by chloride, and all organic matter has been oxidized. For most purposes, salinity is considered equivalent to total dissolved salt content. Salinity is normally expressed in parts per thousand.

(33) **Settleable solids** - The volume or weight of material which will settle out of a water sample in a specified period of time.

(34) **Seven-day, two-year low-flow** - The lowest average flow for seven consecutive days with a recurrence interval of two years, as statistically determined from historical data. It is the flow used for determining the allowable discharge load to a stream.

(35) **Shellfish** - Clams, oysters, mussels, crabs, crayfish, lobsters, and shrimp.

(36) **Standard Methods for the Examination of Water and Wastewater** - A document describing sampling and analytical procedures, which is published by the American Public Health Association, American Water Works Association, and Water Environment Federation. The most recent edition of this document is to be followed whenever its use is specified by these rules.

(37) **Standards** - The designation of waterbodies for desirable uses and the narrative and numerical criteria deemed necessary to protect those uses.

(38) **Standards implementation procedures** - Procedures entitled *Implementation of the Texas Natural Resource Conservation Commission Standards via Permitting*.

(39) **Stream order** - A classification of stream size, where the smallest, unbranched tributaries of a drainage basin are designated first order streams. Where two first order streams join, a second order stream is formed; and where two second order streams join, a third order stream is formed, etc. For purposes of water quality standards application, stream order is determined from USGS topographic maps with a scale of 1:24,000.

(40) **Surface water in the state** - Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all watercourses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law, regulation, or permit, and which are created for the purpose of waste treatment are not considered to be waters in the state.

(41) **Sustainable Fisheries** - Descriptive of waterbodies which potentially have sufficient fish production or fishing activity to create significant long-term human consumption of fish. Sustainable fisheries include perennial streams and rivers with a stream order of three or greater; lakes and reservoirs greater than or equal to 150 acre-feet and/or 50 surface acres; all bays, estuaries, and tidal rivers. Waterbodies which are presumed to have sustainable fisheries include all designated segments listed in Appendix A unless specifically exempted.

(42) **Total dissolved solids** - The amount of material (inorganic salts and small amounts of organic material) dissolved in water and commonly expressed as a concentration in terms of milligrams per liter. The term is equivalent to the term filterable residue, as used in the publication entitled, *Standard Methods for the Examination of Water and Wastewater*.

(43) **Total suspended solids** - Total suspended matter in water, which is commonly expressed as a concentration in terms of milligrams per liter. The term is equivalent to nonfilterable residue, as used in the publication entitled, *Standard Methods for the Examination of Water and Wastewater.*

(44) **Total toxicity** - Toxicity as determined by exposing aquatic organisms to samples or dilutions of instream water or treated effluent. Also referred to as whole effluent toxicity or biomonitoring.

(45) **Toxicity** - The occurrence of adverse effects to living organisms due to exposure to toxic materials. Adverse effects caused by conditions of temperature and dissolved oxygen are excluded from the definition of toxicity. With respect to the provisions of §307.6(e) of this title (relating to Toxic Materials), which concerns total toxicity and biomonitoring requirements, adverse effects caused by concentrations of dissolved salts (such as sodium, potassium, calcium, chloride, carbonate) in source waters are excluded from the definition of toxicity. Source water is defined as surface water or groundwater that is used as a public water supply or industrial water supply (including a cooling-water supply). Source water does not include brine water that is produced during the extraction of oil and gas, or other sources of brine water that are substantially uncharacteristic of surface waters in the area of discharge. In addition, adverse effects caused by concentrations of dissolved salts which are added to source water by industrial processes are not excluded from the requirements of §307.6(e) of this title, except as specifically noted in §307.6(e)(2)(B) of this title, which concerns requirements for toxicity testing of 100% effluent. This definition of toxicity does not affect the standards for dissolved salts in this chapter other than §307.6(e) of this title. The standards implementation procedures contain provisions to protect surface waters from adverse effects of dissolved salts and methods to address the effects of dissolved salts on total toxicity tests.

(46) **Toxicity biomonitoring** - The determination of total toxicity. Documents which describe procedures for toxicity biomonitoring are cited in §307.6 of this title.

(47) **Water-effects ratio** - The quantifiable difference in the toxicity of a substance at an instream site, in comparison to the toxicity that was measured in experiments using laboratory water. The water-effects ratio provides an estimate of the bioavailability and toxicity of a substance in a particular waterbody. It may be used to establish site-specific criteria for aquatic life protection. The water-effects ratio is calculated as the toxic concentration (LC_{50}) of a substance in water at a particular site, divided by the toxic concentration of that substance as reported in lab toxicity tests. The site-specific criterion is equal to the water-effects ratio times the statewide aquatic life criterion in 307.6(c) of this title.

(48) **Water quality management program** - The commission's overall program for attaining and maintaining water quality consistent with state standards, as authorized under the Texas Water Code, the Texas Administrative Code, and the Clean Water Act, §§106, 205(j), 208, 303(e) and 314 (33 United States Code §§1251 et seq).

(49) **Wetland** - An area (including a swamp, marsh, bog, prairie pothole, or similar area) having a predominance of hydric soils that are inundated or saturated by surface or groundwater

at a frequency and duration sufficient to support and that under normal circumstances supports the growth and regeneration of hydrophytic vegetation. The term "hydric soil" means soil that, in its undrained condition, is saturated, flooded, or ponded long enough during a growing season to develop an anaerobic condition that supports the growth and regeneration of hydrophytic vegetation. The term "hydrophytic vegetation" means a plant growing in: water or a substrate that is at least periodically deficient in oxygen during a growing season as a result of excessive water content. The term "wetland" does not include irrigated acreage used as farmland; a man-made wetland of less than one acre; or a man-made wetland for which construction or creation commenced on or after August 28, 1989, and which was not constructed with wetland creation as a stated objective, including but not limited to an impoundment made for the purpose of soil and water conservation which has been approved or requested by soil and water conservation districts. If this definition of wetland conflicts with the federal definition in any manner, the federal definition prevails.

(50) **Zone of initial dilution** - The small area at the immediate point of discharge where initial dilution with receiving waters occurs, and which may not meet certain criteria applicable to the receiving water. A zone of initial dilution is substantially smaller than a mixing zone.

(51) **Bioconcentration factor (BCF)** - A unitless value describing the degree to which a chemical can be concentrated in the tissues of an organism in the aquatic environment. The BCF is the concentration of a chemical in one or more tissues of the organism divided by the average exposure concentration the organism received.

(b) Abbreviations. The following abbreviations apply to this chapter:

(1) AP - aquifer protection.

(2) BMP - best management practices.

(3) AS - agricultural water supply.

(4) CFR - Code of Federal Regulations.

(5) Cl^{-1} - chloride.

(6) CR - contact recreation.

(7) DO - dissolved oxygen.

(8) E - exceptional aquatic life use.

(9) EPA - U.S. Environmental Protection Agency.

(10) °F - degree(s) Fahrenheit.

(11) ft^3/s - cubic feet per second.

(12) H - high aquatic life use.

(13) I - intermediate aquatic life use.

(14) IS - industrial water supply.

(15) L - limited aquatic life use.

(16) mg/L - milligrams per liter

(17) ml - milliliter.

(18) N - navigation.

(19) NCR - noncontact recreation.

(20) NPDES - National Pollutant Discharge Elimination System, as set out in the Clean Water Act, §402 (33 United States Code 1342).

(21) O - oyster waters.

(22) PS - public water supply.

(23) 7Q2 - seven-day, two-year low-flow.

(24) SO_4^{-2} - sulfate.

(25) TDS - total dissolved solids.

(26) USFDA - U.S. Food and Drug Administration.

(27) USGS - U.S. Geological Survey.

(28) WF - waterfowl habitat.

(29) WQM - water quality management.

(30) μg/L - micrograms per liter.

(31) ZID - zone of initial dilution.

§307.4. General Criteria.

(a) Application. The general criteria set forth in this section apply to surface water in the state and specifically apply to substances attributed to waste discharges or the activities of man. General criteria do not apply to those instances in which surface water, as a result of natural phenomena, exhibit characteristics beyond the limits established by this section. General criteria are superseded by specific exemptions stated in this section or in §307.8 of this title (relating to the Application of Standards), or by site-specific water quality standards for classified segments. Provisions of the general criteria remain in effect in mixing zones or below critical low-flow conditions unless specifically exempted in §307.8 of this title (relating to the Application of Standards).

(b) Aesthetic parameters.

(1) Concentrations of taste and odor producing substances shall not interfere with the production of potable water by reasonable water treatment methods, impart unpalatable flavor to food fish including shellfish, result in offensive odors arising from the waters, or otherwise interfere with the reasonable use of the water in the state.

(2) Surface water shall be essentially free of floating debris and suspended solids that are conducive to producing adverse responses in aquatic organisms or putrescible sludge deposits or sediment layers which adversely affect benthic biota or any lawful uses.

(3) Surface waters shall be essentially free of settleable solids conducive to changes in flow characteristics of stream channels or the untimely filling of reservoirs, lakes, and bays.

(4) Surface waters shall be maintained in an aesthetically attractive condition.

(5) Waste discharges shall not cause substantial and persistent changes from ambient conditions of turbidity or color.

(6) There shall be no foaming or frothing of a persistent nature.

(7) Surface waters shall be maintained so that oil, grease, or related residue will not produce a visible film of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse; or cause toxicity to man, aquatic life, or terrestrial life in accordance with §307.4(d) of this title (relating to toxic parameters).

(c) Radiological parameters. Radioactive materials shall not be discharged in excess of the amount regulated by Chapter 336 of this title (relating to Radiation Rules).

(d) Toxic parameters. Surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life. Additional standards requirements for toxic materials are specified in §307.6 of this title (relating to Toxic Materials).

(e) Nutrient parameters. Nutrients from permitted discharges or other controllable sources shall not cause excessive growth of aquatic vegetation which impairs an existing, attainable, or designated use. Sitespecific nutrient criteria, nutrient permit limitations, and/or separate rules to control nutrients in individual watersheds will be established where appropriate after notice and opportunity for public participation and proper hearing.

(f) Temperature. Consistent with §307.1 of this title (relating to General Policy Statement) and in accordance with state water rights permits, temperature in industrial cooling lake impoundments and all other surface water in the state shall be maintained so as to not interfere with the reasonable use of such waters. Numerical temperature criteria have not been specifically established for industrial cooling lake impoundments, which in most areas of the state contribute to water conservation and water quality objectives. With the exception of industrial cooling impoundments, temperature elevations due to discharges of treated domestic (sanitary) effluent, and designated mixing zones, the following temperature criteria, expressed as a maximum temperature differential (rise over ambient) are established: freshwater streams -5°F; freshwater lakes and impoundments - 3°F; tidal river reaches, bay and gulf waters - 4°F in fall, winter, and spring, and 1.5°F in summer (June, July, and August). Additional temperature criteria (expressed as maximum temperatures) for classified segments are specified in Appendix A of §307.10 of this title (relating to Appendices A - E).

(g) Salinity.

(1) Estuarine salinity criteria have not been established, despite the recognition that proper salinity gradient maintenance is important for the continuation of balanced and desirable populations of estuarine dependent marine life, because weather is the dominant factor influencing salinity gradients.

(2) Absence of numerical salinity criteria shall not preclude evaluations and regulatory actions based on estuarine salinity, and careful consideration will be given to all activities which may detrimentally affect salinity gradients in estuarine waters.

(3) Concentrations and the relative ratios of dissolved minerals such as chlorides, sulfates, and total dissolved solids will be maintained such that attainable uses will not be impaired.

(h) Dissolved oxygen and aquatic life uses.

(1) Dissolved oxygen criteria for unclassified waters with aquatic life uses will be sufficient to support appropriate aquatic life use categories, in accordance with §307.7 of this title (relating to Site-specific Uses and Criteria). Perennial streams, rivers, lakes, bays, estuaries, and other appropriate perennial waters which are not specifically listed in Appendix A or D of §307.10 of this title are presumed to have a high aquatic life use and corresponding dissolved oxygen criteria. In accordance with results from statewide ecoregion studies, unclassified perennial streams in southeast and northeast Texas are assigned dissolved oxygen criteria as indicated in §307.7(b)(3)(A)(ii) of this title. Higher uses will be maintained where they are attainable.

(2) Intermittent streams which are not specifically listed in Appendix A or D of §307.10 of this title will maintain a 24-hour dissolved oxygen mean of 2.0 mg/L and an absolute minimum dissolved oxygen concentration of 1.5 mg/L. For intermittent streams with seasonal aquatic life uses, dissolved oxygen concentrations commensurate with the aquatic life uses will be maintained during the seasons in which the aquatic life uses occur. Unclassified intermittent streams with significant aquatic life uses created by perennial pools are presumed to have a limited aquatic life use and corresponding dissolved oxygen criteria. Additional definitions of significant aquatic life, perennial pools, and seasonal uses will be developed in the standards implementation procedures. Higher uses will be maintained where they are attainable.

(i) Bacteria. A fecal coliform criterion of not more than 200 bacteria per 100 ml shall apply to all waterbodies not specifically listed in Appendix A of §307.10 of this title (relating to Appendices A - E). Application of this criterion shall be in accordance with §307.7(b)(1) of this title.

(j) Antidegradation. Nothing in this section shall be construed or otherwise utilized to supersede the requirements of §307.5 of this title (relating to Antidegradation).

(k) Assessment of unclassified waters. Waters which are not specifically listed in Appendices A or D of §307.10 of this title are designated for the specific uses that are attainable or characteristic of those waters. Upon administrative or regulatory action by the commission which affects a particular unclassified waterbody, the characteristics of the affected waterbody will be reviewed to determine which aquatic life uses are appropriate. Additional uses so determined shall be indicated in public notices for discharge applications. Uses which are not applicable throughout the year in a particular unclassified waterbody will be assigned and protected for the seasons in which such uses are attainable. Initial determinations of use shall be considered preliminary, and in no way preclude redeterminations of use in public hearings conducted by the commission under the provisions of the Texas Water Code. For unclassified waters where the presumed minimum uses or criteria specified in this section are inappropriate, site-specific standards may be developed in accordance with §307.2(d) of this title (relating to Modification of Standards). Uses and criteria will be assigned in accordance with this section and with §307.7(3) of this title. Procedures for assigning uses and criteria are described in the standards implementation procedures.

Adopted March 19, 1997 Effective April 30, 1997

§307.5. Antidegradation.

(a) Application. The antidegradation policy and implementation procedures set forth in this section shall apply to actions regulated under state and federal authority which would increase pollutant loads to the water in the state. Such actions include authorized wastewater discharges, waste load evaluations, and any other miscellaneous actions, such as those related to man-induced nonpoint sources of pollution, which may impact the water in the state.

(b) Antidegradation policy. In accordance with the Texas Water Code, §26.003, it is the policy of the commission that:

(1) Water quality sufficient to protect existing uses will be maintained. Categories of existing uses are the same as for designated uses, as defined in §307.7 of this title (relating to Site-specific Uses and Criteria).

(2) No activities subject to regulatory action which would cause degradation of waters which exceed fishable/swimmable quality will be allowed unless it can be shown to the commission's satisfaction that the lowering of water quality is necessary for important economic or social development. Degradation is defined as a lowering of water quality to more than a de minimis extent, but not to the extent that an existing use is impaired. Water quality sufficient to protect existing uses will be maintained. Fishable/swimmable waters are defined as waters which have quality sufficient to support propagation of indigenous fish, shellfish, and wildlife and recreation in and on the water.

(3) Outstanding national resource waters are defined as high quality waters within or adjacent to national parks and wildlife refuges, state parks, wild and scenic rivers designated by law, and other designated areas of exceptional recreational or ecological significance. The quality of outstanding national resource waters will be maintained and protected.

(4) Authorized wastewater discharges or other activities will not result in the quality of any water being lowered below water quality standards without complying with federal and state laws applicable to water quality standards amendment.

(5) Anyone discharging wastewater which would constitute a new source of pollution or an increased source of pollution from any industrial, public, or private project or development will be required to provide a level of wastewater treatment consistent with the provisions of the Texas Water Code and the Clean Water Act (33 United States Code 1251 et seq.). As necessary, cost-effective and reasonable best management practices established through the Texas water quality management program shall be achieved for nonpoint sources of pollution.

(6) Application of antidegradation provisions shall not preclude the commission from establishing modified thermal discharge limitations consistent with the Clean Water Act, §316(a) (33 United States Code 1326).

(c) Antidegradation implementation procedures.

(1) The commission staff will review any wastewater discharge permit application or amendment in accordance with permitting procedures described in the standards implementation procedures. This review will include a preliminary determination of the existing uses of the receiving water. These existing uses will be maintained and protected.

(2) For proposed permit applications or amendments to discharge into waters exceeding fishable/swimmable quality, the commission staff will preliminarily determine if the discharge is expected to cause a degradation of water quality.

(3) All pollutants which could cause degradation of waters which exceed fishable/swimmable quality will be considered in the evaluation of waste discharge permits. For

dissolved oxygen, analyses of degradation will utilize the same critical conditions as are used for permit reviews and waste load evaluations. For other parameters, appropriate conditions may vary. Conditions for determining degradation will be commensurate with conditions for determining existing uses. The highest water quality sustained since November 28, 1975 (in accordance with EPA Standards Regulation 40 Code of Federal Regulations Part 131) define baseline conditions for determinations of degradation.

(4) When degradation of waters exceeding fishable/swimmable quality is anticipated, a statement that the antidegradation policy will be pertinent to the permit action will be included in the public notice for the said permit application or amendment. If no degradation is anticipated, the public notice will so state. The determination of existing use and the probability of degradation are issues upon which evidence can be introduced in permit hearings.

(5) Interested parties will be given the opportunity to provide comments and additional information concerning the determination of existing uses, anticipated impacts of the discharge, baseline conditions, and necessity of the discharge for important economic or social development if degradation of water quality is expected. The commissioners will decide after full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process if the economic or social development is important enough to allow the degradation.

(6) Waste load evaluations conducted by the commission will adhere to the provisions of the antidegradation policy. If the waste load evaluation indicates that degradation of waters exceeding fishable/swimmable quality is expected, the public hearing notice will so state. The commission will not approve any waste load evaluation that would allow degradation of waters exceeding fishable/ swimmable quality unless and until it has been demonstrated to the commission that the recommended lower water quality is necessary for important economic or social development. Permits which are consistent with an approved waste load evaluation under this antidegradation policy will not be separately subjected to the antidegradation provisions of this section unless the discharge may cause impacts on the receiving water which were not addressed by the waste load evaluation.

(7) Additional implementation procedures for the antidegradation policy are described in the standards implementation procedures.

Adopted June 14, 1995 Effective July 13, 1995

§307.6. Toxic Materials.

(a) Application. Standards and procedures set forth in this section shall be applied in accordance with §307.8 of this title (relating to Application of Standards) and §307.9 of this title (relating to Determination of Standards Attainment).

(b) General provisions.

(1) Water in the state shall not be acutely toxic to aquatic life in accordance with §307.8 of this title (relating to Application of Standards).

(2) Water in the state with designated or existing aquatic life uses shall not be chronically toxic to aquatic life, in accordance with §307.8 of this title (relating to Application of Standards).

(3) Water in the state shall be maintained to preclude adverse toxic effects on human health resulting from contact recreation, consumption of aquatic organisms, consumption of drinking water or any combination of the above. Waters in the state with sustainable fisheries and/or public drinking water supply uses will not exceed applicable human health toxic criteria, in accordance with §307.6(d) of this title (relating to specific human health criteria) and §307.8 of this title (relating to Application of Standards).

(4) Water in the state shall be maintained to preclude adverse toxic effects on aquatic and terrestrial wildlife, livestock, or domestic animals, resulting from contact, consumption of aquatic organisms, consumption of water, or any combination of the above.

(c) Specific numerical aquatic life criteria.

(1) Numerical criteria are established in Table 1 for those specific toxic substances for which adequate toxicity information is available, and which have the potential for exerting adverse impacts on water in the state.

(2) Numerical criteria are based on ambient water quality criteria documents published by EPA. EPA guidance criteria have been appropriately recalculated to eliminate the effects of toxicity data for aquatic organisms which are not native to Texas, in accordance with procedures in the EPA guidance document entitled *Guidelines for Deriving Numerical Site-specific Water Quality Criteria* (EPA 600/3-84-099).

(3) Specific numerical acute aquatic life criteria are applied as 24-hour averages, and specific numerical chronic aquatic life criteria are applied as seven-day averages.

(4) Ammonia and chlorine toxicity will be addressed by total toxicity biomonitoring requirements in subsection (e) of this section.

(5) Specific numerical aquatic life criteria for metals and metalloids in Table 1 apply to dissolved concentrations (unless otherwise stated), which can be estimated by filtration of samples prior to analysis, or by converting from total recoverable measurements in accordance with procedures approved by the commission in the latest revision of the standards implementation procedures. Specific numerical aquatic life criteria for non-metallic substances in Table 1 apply to total recoverable concentrations unless otherwise noted.

TABLE 1

Criteria in Water for Specific Toxic Materials -
AQUATIC LIFE PROTECTION
(All values are listed or calculated in micrograms per liter)
(Hardness concentrations are input as milligrams per liter)

Parameter	Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Aldrin	3.0	---	1.3	---
Aluminum (d)	991	---	---	---
Arsenic (d)	360	190	149	78
Cadmium (d)	$e^{(1.128(\ln(\text{hardness}))-1.6774)}$	$e^{(0.7852(\ln(\text{hardness}))-3.490)}$	45.62	10.02
Carbaryl	2.0	---	613	---
Chlordane	2.4	0.0043	0.09	0.004
Chlorpyrifos	0.083	0.041	0.011	0.0056
Chromium (Tri) (d)	$e^{(0.8190(\ln(\text{hardness}))+3.688)}$	$e^{(0.8190(\ln(\text{hardness}))+1.561)}$	---	---
Chromium (Hex) (d)	16	11	1,100	50
Copper (d)*	$e^{(0.9422(\ln(\text{hardness}))-1.3844)}$	$e^{(0.8545(\ln(\text{hardness}))-1.386)}$	16.27	4.37
Cyanide † (free)	45.78	10.69	5.6	5.6
4,4'- DDT	1.1	0.0010	0.13	0.0010
Demeton	-	0.1	---	0.1
Dicofol	59.3	19.8	---	---
Dieldrin	2.5	0.0019	0.71	0.0019
Diuron	210	70	---	---
Endosulfan I (alpha)	0.22	0.056	0.034	0.0087
Endosulfan II (beta)	0.22	0.056	0.034	0.0087
Endosulfan sulfate	0.22	0.056	0.034	0.0087

TABLE 1 (continued)

Parameter	Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Endrin	0.18	0.0023	0.037	0.0023
Guthion	---	0.01	---	0.01
Heptachlor	0.52	0.0038	0.053	0.0036
Hexachlorocyclohexane (Lindane)	2.0	0.08	0.16	---
Lead (d)	$e^{(1.273(\ln(\text{hardness}))-1.460)}$	$e^{(1.273(\ln(\text{hardness}))-4.705)}$	140	5.6
Malathion	---	0.01	---	0.01
Mercury	2.4	1.3	2.1	1.1
Methoxychlor	---	0.03	---	0.03
Mirex	---	0.001	---	0.001
Nickel (d)	$e^{(0.8460(\ln(\text{hardness}))+3.3612)}$	$e^{(0.8460(\ln(\text{hardness}))+1.1645)}$	119	13.2
Polychlorinated Biphenyls (PCB's)‡	2.0	0.014	10	0.03
Parathion (ethyl)	0.065	0.013	---	---
Phenanthrene	30	30	7.7	4.6
Pentachlorophenol	$e^{(1.005(\text{pH})-4.830)}$	$e^{(1.005(\text{pH})-5.290)}$	15.14	9.56
Selenium	20	5	564	136
Silver, as free ion	0.92	---	2.3	---
Toxaphene	0.78	0.0002	0.21	0.0002
Tributlytin (TBT)	0.13	0.024	0.24	0.043
2,4,5 Trichlorophenol	136	64	259	12
Zinc (d)	$e^{(0.8473(\ln(\text{hardness}))+0.8604)}$	$e^{(0.8473(\ln(\text{hardness}))+0.7614)}$	98	89

* In designated oyster waters an acute marine copper criterion of 4.37 micrograms per liter applies outside of the mixing zone of permitted discharges, and specified mixing zones for copper will not encompass oyster reefs containing live oysters.

† Compliance will be determined using the analytical method for cyanide amenable to chlorination or by weak acid dissociable cyanide.

‡ Calculated as the sum of seven PCB congeners 1242, 1254, 1221, 1232, 1248, 1260 and 1016.

(d) Indicates that the criteria for a specific parameter are for the dissolved portion in water. All other criteria are for total recoverable concentrations, except where noted.

(6) Specific numerical acute criteria for toxic substances are applicable to all waters in the state except for small zones of initial dilution (ZIDs) at discharge points. Acute criteria may be exceeded within a ZID, but there shall be no lethality to aquatic organisms which move through a ZID, and the sizes of ZIDs are limited in accordance with §307.8 of this title. Specific numerical chronic criteria are applicable to all waters in the state with designated or existing aquatic life uses, except inside mixing zones and below critical low-flow conditions, in accordance with §307.8 of this title.

(7) For toxic materials for which specific numerical criteria are not listed in Table 1, the appropriate criteria for aquatic life protection may be derived in accordance with current EPA guidelines for deriving site-specific water quality criteria. When insufficient data are available to use EPA guidelines, the following provisions shall be applied in accordance with this section and §307.8 of this title:

(A) acute criteria will be calculated as 0.3 of the LC_{50} of the most sensitive aquatic organism; LC_{50} x (0.3)= acute criteria;

(B) concentrations of non-persistent toxic materials shall not exceed concentrations which are chronically toxic (as determined from appropriate chronic toxicity data or calculated as 0.1 of acute LC_{50} values) to the most sensitive aquatic organisms; LC_{50} x (0.1) = chronic criteria;

(C) concentrations of persistent toxic materials that do not bioaccumulate shall not exceed concentrations which are chronically toxic (as determined from appropriate chronic toxicity data or calculated as 0.05 of LC_{50} values) to the most sensitive aquatic organisms; and

(D) concentrations of toxic materials that bioaccumulate shall not exceed concentrations that are chronically toxic (as determined from appropriate chronic toxicity data or calculated as 0.01 of LC_{50} values) to the most sensitive aquatic organisms.

(8) For toxic substances where the relationship of toxicity is defined as a function of pH or hardness, numerical criteria are presented as an equation based on this relationship. Appropriate pH or hardness values for such criteria are listed for each basin in Table 2. The indicated pH and hardness values (Table 2) for each basin will be assumed unless sufficient data are available to derive segment specific pH and hardness values.

TABLE 2

Total Hardness and pH Values (15th percentile) Used for Determining Select In-stream Toxic Criteria. Segment values will be used when there is sufficient data.

Alternative percentile values may be used to determine permit limits which are protective during low-flow conditions. A list of these values can be found in the standards implementation procedures. All values are from long-term Statewide Monitoring Network Data.

Basin Number/ Name	pH	Hardness
(01) Canadian River Basin	7.7	200
(02) Red River Basin	7.4	169
(03) Sulphur River Basin	6.8	54
(04) Cypress Creek Basin	6.0	23
(05) Sabine River Basin	6.5	30
(06) Neches River Basin	6.5	32
(07) Neches-Trinity Coastal Basin	6.7	84
(08) Trinity River Basin	7.2	80
(09) Trinity-San Jacinto Coastal Basin	7.1	115
(10) San Jacinto River Basin	6.7	54
(11) San Jacinto-Brazos Coastal Basin	7.2	150
(12) Brazos River Basin	7.4	141
(13) Brazos-Colorado Coastal Basin	7.3	96
(14) Colorado River Basin	7.5	170
(15) Colorado-Lavaca Coastal Basin	7.5	111
(16) Lavaca River Basin	7.4	90
(17) Lavaca-Guadalupe Coastal Basin	7.5	140*
(18) Guadalupe River Basin	7.6	190
(19) San Antonio River Basin	7.4	230
(20) San Antonio-Nueces Coastal Basin	7.2	110
(21) Nueces River Basin	7.6	160
(22) Nueces-Rio Grande Coastal Basin	7.4	400
(23) Rio Grande Basin	7.7	250
(24) Bays and Estuaries	7.7	n/a

* insufficient data--average values of adjacent basins are assumed.

(9) Additional site-specific factors may indicate that the numerical criteria listed in Table 1 are inappropriate for a particular waterbody. These factors are applied as a site-specific standards modification in accordance with §307.2(d) of this title (relating to Modification of Standards). The application of a site-specific standard must not impair an existing, attainable, or designated use. Factors which may justify a temporary variance or site-specific standards amendment include the following:

(A) background concentrations of specific toxics of concern in receiving waters, sediment, and/or indigenous biota;

(B) persistence and degradation rate of specific toxic materials;

(C) synergistic, additive, or antagonistic interactions of toxic substances with other toxic or nontoxic materials;

(D) measurements of total effluent toxicity;

(E) indigenous aquatic organisms, which may have different responses to particular toxic materials;

(F) technological or economic limits of treatability for specific toxic materials;

(G) bioavailability of specific toxic substances of concern, as determined by water-effect ratio tests or other analyses approved by the commission; and

(H) new information concerning the toxicity of a particular substance.

(d) Specific numerical human health criteria.

(1) Numerical human health criteria are established in Table 3.

(2) Categories of human health criteria:

(A) concentration criteria in freshwaters to prevent contamination of drinking water, fish and other aquatic life to ensure that they are safe for human consumption. These criteria apply to freshwaters which are designated or used for public drinking water supplies. (column A in Table 3);

(B) concentration criteria in freshwaters to prevent contamination of fish and other aquatic life to ensure that they are safe for human consumption. These criteria apply to freshwater which have sustainable fisheries, and which are **not** designated or used for public water supply (column B in Table 3);

(C) concentration criteria in marine waters to prevent contamination of fish and other aquatic life to ensure that they are safe for human health consumption. These criteria apply to marine waters which have sustainable fisheries, (column C in Table 3).

(3) Specific assumptions and procedures (except where noted in Table 3).

(A) Criteria were derived from information on toxicity in EPA's Integrated Risk Information Systems (IRIS) for both cancer potency slopes ($q1^*$) and reference doses for non-carcinogens (Rfd). The values in Table 3 reflect values found in IRIS as of January 1994.

(B) For known or suspected carcinogens (Types A, B, B_2, or C in IRIS), an incremental cancer risk level of 10^{-5} (1 in 100,000) was used to derive criteria. A RfD (reference dose) was determined for noncarcinogens and for carcinogens for which EPA has not derived cancer slope factors.

(C) Consumption rates of fish and shellfish were estimated as 10 grams per person per day for people living inland, and 15 grams per person per day for people living near the coast.

(D) Drinking water consumption rates were estimated as 2.0 liters per person per day.

(E) The ratio of average body weights was used to convert data on laboratory test animals to human scale. When the weight of test animals was not specified, the average weights were considered to be 0.35 kilograms for rats, 0.03 kilograms for mice, and 70 kilograms for humans.

(F) Bioconcentration factors were obtained from the Quantitative Structure Activity Relationships Database (U.S. Environmental Protection Agency), and corrected to an average lipid concentration in fish tissue of 3.0%.

(G) Numerical human health criteria were derived in accordance with the general procedures and calculations in the EPA guidance documents entitled *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001); and *Guidance Manual for Assessing Human Health Risks from Chemically Contaminated Fish and Shellfish* (EPA/503/8-89-002).

(H) If a calculated criterion to prevent contamination of drinking water and fish to ensure they are safe for human consumption (column A in Table 3) was greater than the applicable maximum contaminant level (MCL) in Chapter 290 of this title (relating to Water Hygiene), then the maximum contaminant level was used as the criterion. MCL's were updated February 1993.

(I) If the concentration of a substance in fish tissue used for these calculations was greater than the applicable U.S. Food and Drug Administration Action Level for edible fish and shellfish tissue, then the acceptable concentration in fish tissue was lowered to the Action Level for calculation of criteria.

TABLE 3

Criteria in Water for Specific Toxic Materials
HUMAN HEALTH PROTECTION
(All values are listed or calculated in micrograms per liter)

	A	B	C
COMPOUND	Water and Fish µg/L	FW Fish Only µg/L	SW Fish Only µg/L
Aldrin	0.0312	0.0327	0.0218
Alpha Hexachlorocyclohexane	0.645	0.997	0.665
Arsenic (d)	50*	---	---
Barium (d)	2000*	---	---
Benzene	5*	312	208
Benzidine †	0.0011	0.0035	0.0023
Benzo(a)anthracene	0.0261	0.0265	---
Benzo(a)pyrene	0.0261	0.0265	---
Beta Hexachlorocyclohexane	2.26	3.49	2.33
Bis(chloromethyl)ether	0.0207	1.59	1.06
Cadmium (d)	5*	---	---
Carbon Tetrachloride	5*	182	121
Chlordane‡	0.0210	0.0213	0.0213
Chlorobenzene	1,305	4,947	3,298
Chloroform	---	12,130	8,087
Chromium (d)	100*	---	---
Chrysene	0.0261	0.0265	---
Cresols	4,049	46,667	31,111
Cyanide (free)§	200*	---	---

TABLE 3 (Continued)

COMPOUND	A Water and Fish µg/L	B FW Fish Only µg/L	C SW Fish Only µg/L
4,4' - DDD	0.297	0.299	0.199
4,4' - DDE	0.0544	0.0545	0.0363
4,4' - DDT	0.0527	0.0528	0.0352
2,4 - D	70*	---	---
Danitol	0.709	0.721	0.481
Dibromochloromethane	100*	15,354	10,236
1,2, - Dibromomethane	0.0518	1.15	0.769
Dieldrin†	0.0012	0.0012	0.0008
p-Dichlorobenzene (1,4 Dichlorobenzene)	75*	---	---
1,2 - Dichloroethane	5*	1,794	1,196
1,1 - Dichloroethylene	7*	87.4	58.3
Dicofol	0.215	0.217	0.144
Dioxins/Furans (TCDD Equivalents)†	0.0000010	0.0000010	0.0000007
Compound Equivalency Factors			
2,3,7,8 TCDD 1			
1,2,3,7,8, PeCDD 0.5			
2,3,7,8,HxCDD's 0.1			
2,3,7,8 TCDF 0.1			
1,2,3,7,8 PeCDF 0.05			
2,3,4,7,8 PeCDF 0.5			
2,3,7,8 HxCDF's 0.1			
Endrin	2*	---	---
Fluoride	4,000*	---	---

TABLE 3 (Continued)

COMPOUND	A Water and Fish µg/L	B FW Fish Only µg/L	C SW Fish Only µg/L
Gamma Hexachlorocyclohexane (Lindane)	0.2*	16.0	10.7
Heptachlor†	0.0177	0.0181	0.0120
Heptachlor Epoxide	0.2*	7.39	4.92
Hexachlorobenzene	0.0129	0.0129	0.0086
Hexachlorabutadiene	9.34	11.2	7.48
Hexachloroethane	84.4	94.1	62.7
Hexachlorophene	0.0531	0.0532	0.0355
Lead (d)	5.00	25.00	3.85
Mercury ‡	0.0122	0.0122	0.0250
Methoxychlor	40*	---	---
Methyl Ethyl Ketone	4,411	886,667	591,111
Mirex	0.0171	0.0189	0.0126
Nitrate-Nitrogen	10,000*	---	---
Nitrobenzene	41.8	721	481
N-Nitrosodiethylamine	0.0382	7.68	5.12
N-Nitroso-di-*n*-Butylamine	1.84	13.5	8.98
PCB's (Polychlorinated Biphenyls)#	0.0013	0.0013	0.0009
Pentachlorobenzene	1.09	1.11	0.739
Pentachlorophenol	129	136	90.5
Pyridine	88.1	13,333	8,889

TABLE 3 (Continued)

COMPOUND	A Water and Fish µg/L	B FW Fish Only µg/L	C SW Fish Only µg/L
Selenium	50*	---	---
1,2,4,5 - Tetrachlorobenzene	1.43	1.52	1.01
Tetrachloroethylene	5*	1,832	1,221
Toxaphene†	0.0440	0.0445	0.0297
2,4,5 -TP (Silvex)	50*	---	---
2,4,5 - Trichlorophenol	2,767	4,021	2,681
Trichloroethylene	5*	---	---
1,1,1 - Trichloroethane	200*	---	---
TTHM (Sum of total trihalomethanes) bromodichloromethane dibromochloromethane tribromomethane (bromoform) trichloromethane (chloroform)	100*	---	---
Vinyl Chloride	2*	94.5	63.0

* Based on Maximum Contaminant Levels (MCL's) specified in 30 TAC §290 (relating to Water Hygiene).

† Calculations based on measured bioconcentration factors with no lipid correction factor applied.

‡ Calculations based on USFDA action levels in fish tissue.

§ Compliance will be determined using the analytical method for cyanide amenable to chlorination or weak-acid dissociable cyanide.

\# Calculated as the sum of seven PCB congeners: 1016, 1221, 1232, 1242, 1254, 1248, and 1260.

(d) Indicates the criteria is for the dissolved fraction in water. All other criteria are for total recoverable concentrations.

(4) Human health criteria for additional toxic materials will be adopted by the Commission as appropriate.

(5) Specific human health concentration criteria for water are applicable to waters in the state which have sustainable fisheries, and/or designation or use as a public drinking water supply, except within mixing zones and below harmonic mean stream flows, in accordance with §307.8 of this title. The following waters are considered to have sustainable fisheries:

(A) all designated segments listed in Appendix A of §307.10 of this title (relating to Appendices A - E), unless specifically exempted;

(B) perennial streams and rivers with a stream order of three or greater, as defined in §307.3 of this title (relating to Definitions and Abbreviations);

(C) lakes and reservoirs greater than or equal to 150 acre feet and/or 50 surface acres;

(D) all bays, estuaries, and tidal rivers and;

(E) any other waters which potentially have sufficient fish production or fishing activity to create significant long-term human consumption of fish.

(6) Waters which are not considered to have a sustainable fishery, but which have an aquatic life use, will be considered to have an incidental fishery. Consumption rates assumed for incidental fishery waters are 1.0 grams per person per day for inland waters, and 1.5 grams per person per day for marine waters. Numerical criteria applicable to incidental fishery waters are therefore ten times the criteria listed in columns B and C of Table 3.

(7) Specific human health criteria are applied as long term average exposure criteria designed to protect populations over a life time (70 years). Attainment measures for human health are addressed in §307.9 (relating to Determination of Standards Attainment).

(8) For toxic materials of concern for which specific human health criteria are not listed in Table 3, the following provisions shall apply:

(A) for known or suspected carcinogens (Types A, B, B_2, or C in IRIS), a cancer risk of 10^{-5} (1 in 100,000) shall be applied to the numerical criteria published in 57 FR 60848 December 22, 1992.

(B) for toxic materials not defined as carcinogens, the numerical criteria in 57 FR 60848 shall directly apply.

(C) in the absence of available criteria, numerical criteria may be developed from information available in IRIS and Quantitative Structure Activity Relationships Database (QSAR) and calculated in accordance with the provisions of §307.6(d)(3) of this title.

(9) Numerical criteria for bioconcentratable pollutants will be derived in accordance with the general procedures in the EPA guidance document entitled, *Assessment and Control of Bioconcentratable Contaminants in Surface Waters* (March 1991). The commission may develop discharge permit limits in accordance with the provisions of this section.

(10) Numerical human health criteria are expressed as total recoverable concentrations for nonmetals, and for mercury, and as dissolved concentrations for other metals and metalloids.

(11) Additional site-specific factors may indicate that the numerical human health criteria listed in Table 3 are inappropriate for a particular waterbody. These factors are applied as a site-specific standards modification in accordance with §307.2(d) of this title (relating to Modification of Standards). The application of site-specific criteria shall not impair an existing, attainable, or designated use or affect human health. Factors which may justify a temporary variance or site-specific standards amendment include the following:

(A) background concentrations of specific toxics of concern in receiving waters, sediment, and/or indigenous biota;

(B) persistence and degradation rate of specific toxic materials;

(C) synergistic or antagonistic interactions of toxic substances with other toxic or nontoxic materials;

(D) technological or economic limits of treatability for specific toxic materials;

(E) bioavailability of specific toxic substances of concern;

(F) local water chemistry and other site-specific conditions which may alter the bioconcentration, bioaccumulation, or toxicity of specific toxic substances;

(G) site-specific differences in the bioaccumulation responses of indigenous, edible aquatic organisms to specific toxic materials;

(H) local differences in consumption patterns of fish and shellfish or drinking water, but only if any changes in assumed consumption rates will be protective of the local population that frequently consumes fish, shellfish, or drinking water from a particular waterbody and;

(I) new information concerning the toxicity of a particular substance.

(e) Total toxicity.

(1) Total (whole-effluent) toxicity of permitted discharges, as determined from biomonitoring of effluent samples at appropriate dilutions, will be sufficiently controlled to preclude acute total toxicity in all water in the state with the exception of small zones of initial dilution at discharge points (ZIDs). Acute total toxicity levels may be exceeded in a ZID, but there shall be no lethality to aquatic organisms which move through a ZID, and the sizes of ZIDs are limited in

accordance with §307.8 of this title (relating to Application of Standards). Chronic total toxicity, as determined from biomonitoring of effluent samples, will be precluded in all water in the state with existing or designated aquatic life uses except in mixing zones and at flows less than critical low-flows, in accordance with §307.8 of this title (relating to Application of Standards).

(2) General provisions for controlling total toxicity.

(A) Dischargers whose effluent has a significant potential for exerting toxicity in receiving waters will be required to conduct whole effluent toxicity biomonitoring at appropriate dilutions.

(B) In addition to the other requirements of this section, the effluent of discharges to waters in the state shall not be acutely toxic to sensitive species of aquatic life, as demonstrated by effluent toxicity tests. Toxicity testing for this purpose shall be conducted on samples of 100% effluent, and the criterion for acute toxicity shall be mortality of 50% or more of the test organisms after 24 hours of exposure. These observations for acute toxicity may be conducted during either acute or chronic toxicity tests, which are described in the standards implementation procedures. This provision does not apply to mortality that is a result of an excess, deficiency, or imbalance of dissolved inorganic salts (such as sodium, calcium, potassium, chloride, carbonate) which are in the effluent and are not listed in Table 1 in §307.6(c) of this title or which are in source waters.

(C) The latest revisions of the following EPA publications provide methods for appropriate biomonitoring procedures: *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, and the *Technical Support Document for Water Quality-based Toxics Control*. The use of other procedures approved by the commission is also acceptable. Toxicity tests must be conducted using representative, sensitive aquatic organisms as approved by the commission, and any such testing must adequately determine if toxicity standards are being attained.

(D) If toxicity biomonitoring results indicate that a discharge is exceeding the restrictions on total toxicity in this section, then the permittee shall conduct a toxicity identification evaluation and toxicity reduction evaluation in accordance with permitting procedures of the commission. As a result of a toxicity reduction evaluation, additional conditions may be established in the permit. Such conditions may include total toxicity limits, chemical specific limits, and/or best management practices designed to reduce or eliminate toxicity. Where sufficient to attain and maintain applicable numeric and narrative state water quality standards, a chemical specific limit rather than a total toxicity limit may be established in the permit. Where conditions may be necessary to prevent or reduce effluent toxicity, permits shall include a reasonable schedule for achieving compliance with such additional conditions.

(E) If a permittee demonstrates, using the toxicity identification evaluation and toxicity reduction evaluation procedures, that diazinon is the primary cause of total toxicity, and that diazinon is ubiquitous within the wastewater system, the toxicity will be addressed in §307.6 (e)(2)(E)(i) and (ii) of this title. If diazinon is not the primary cause of total toxicity, or if the permittee

does not proceed with due diligence in controlling and investigating toxicity, or if diazinon is not ubiquitous within the wastewater system, the toxicity may be addressed in accordance with §307.6 (e)(2)(D) of this title.

(i) the permittee will be required to implement a public education and awareness campaign designed to control the introduction of diazinon into the wastewater system, and the permittee will be required to conduct an investigation into the sources of diazinon; and

(ii) the permittee will be required to monitor for diazinon.

(F) Discharge permit limits based on total toxicity may be established in consideration of site-specific factors, but the application of such factors shall not result in impairment of an existing, attainable, or designated use. These factors are applied as a site-specific standards modification in accordance with §307.2(d) of this title. A demonstration that uses are protected may consist of additional effluent toxicity testing, instream monitoring requirements, and/or other necessary information as determined by the commission. Factors which may justify a temporary variance or site-specific standards amendment include the following:

(i) background toxicity of receiving waters;

(ii) persistence and degradation rate of principal toxic materials which are contributing to the total toxicity of the discharge;

(iii) site-specific variables which may alter the impact of toxicity in the discharge; and

(iv) indigenous aquatic organisms, which may have different levels of sensitivity than the species used for total toxicity testing; and

(v) technological, economic, or legal limits of treatability or control for specific toxic materials.

Adopted June 14, 1995 Effective July 13, 1995

§307.7. Site-Specific Uses and Criteria.

(a) Uses and numerical criteria are established on a site-specific basis for classified segments in Appendix A of §307.10 of this title (relating to Appendices A - E). Site-specific uses and numerical criteria may also be applied to unclassified waters in accordance with §307.4(h) of this title (relating to General Criteria) and §307.5(c) of this title (relating to Antidegradation). Site-specific criteria apply specifically to substances attributed to waste discharges or the activities of man. Site-specific criteria do not apply to those instances in which surface waters exceed criteria limits due to natural phenomena. The application of site-specific uses and criteria is described in §307.8 of this title (relating to the Application of Standards) and §307.9 of this title (relating to the Determination of Standards Attainment).

(b) Appropriate uses and criteria for site-specific standards are defined as follows:

(1) Recreation. Recreational use consists of two subcategories--contact recreation waters and noncontact recreation waters. Classified segments will be designated for contact recreation unless elevated fecal coliform bacteria concentrations frequently occur due to sources of pollution which cannot be reasonably controlled by the existing regulations or contact recreation is considered unsafe for other reasons such as ship or barge traffic. In a classified segment where contact recreation is considered unsafe for reasons unrelated to water quality, a designated use of noncontact recreation may be assigned the fecal coliform criteria normally associated with contact recreation. A designation of contact recreation is not a guarantee that the water so designated is completely free of disease-causing organisms. Fecal coliform bacteria, although not generally pathogenic, are indicative of potential contamination by feces of warm blooded animals. The criteria for contact recreation are based on these indicator bacteria, rather than direct measurements of pathogenic bacteria. Even where the concentration of fecal coliform is below the criteria for contact recreation, there is still some risk of contracting waterborne diseases.

(A) Contact recreation waters.

(i) Fecal coliform content shall not exceed 200 colonies per 100 ml as a geometric mean based on a representative sampling of not less than five samples collected over not more than 30 days.

(ii) Fecal coliform content shall not equal or exceed 400 colonies per 100 ml in more than 10% of all samples, but based on at least five samples, taken during any 30-day period. If ten or fewer samples are analyzed, no more than one sample shall exceed 400 colonies per 100 ml.

(B) Noncontact recreation waters.

(i) Fecal coliform content shall not exceed 2,000 colonies per 100 ml as a geometric mean based on a representative sampling of not less than five samples collected over not more than 30 days.

(ii) Fecal coliform content shall not equal or exceed 4,000 colonies per 100 ml in more than 10% of all samples, but based on at least five samples, taken during any 30-day period. If ten or fewer samples are analyzed, no more than one sample shall exceed 4,000 colonies per 100 ml.

(2) Domestic water supply.

(A) Use categories. Domestic water supply consists of two use subcategories--public water supply and aquifer protection.

(i) Public water supply. Segments designated for public water supply are those known to be used as the supply source for public water systems, as defined by Chapter 290 of this title (relating to Water Hygiene).

(ii) Aquifer protection. Segments designated for aquifer protection are capable of recharging the Edwards Aquifer. The principal purpose of this use designation is to protect the quality of water infiltrating into and recharging the aquifer.

(B) Use criteria. The following use criteria apply to both domestic water supply use subcategories.

(i) Radioactivity associated with dissolved minerals in the freshwater portions of river basin and coastal basin waters should not exceed levels established by drinking water standards as specified in Chapter 290 of this title unless the conditions are of natural origin.

(ii) Surface waters utilized for domestic water supply shall not exceed toxic material concentrations that prevent them from being treated by conventional surface water treatment to meet drinking water standards as specified in Chapter 290 of this title.

(iii) Chemical and microbiological quality of surface waters used for domestic water supply should conform to drinking water standards as specified in Chapter 290 of this title.

(3) Aquatic life. The establishment of numerical criteria for aquatic life is highly dependent on desired use, sensitivities of usual aquatic communities, and local physical and chemical characteristics. Five subcategories of aquatic life use are established. They include limited, intermediate, high, and exceptional aquatic life and oyster waters. Aquatic life use subcategories designated for segments listed in Appendix A of §307.10 of this title recognize the natural variability of aquatic community requirements and local environmental conditions.

(A) Dissolved oxygen.

(i) The definitions and associated dissolved oxygen criteria for limited, intermediate, high, and exceptional aquatic life use subcategories are indicated in Table 4.

TABLE 4

Aquatic Life Subcategories

Aquatic Life Use Subcategory	Dissolved Oxygen Criteria, mg/L			Aquatic Life Attributes					
	Freshwater mean/ minimum	Freshwater in Spring mean/ minimum	Saltwater mean/ minimum	Habitat Character-istics	Species Assemblage	Sensitive species	Diversity	Species Richness	Trophic Structure
Exceptional	6.0/4.0	6.0/5.0	5.0/4.0	Outstanding natural variability	Exceptional or unusual	Abundant	Exceptionally high	Exceptionally high	Balanced
High	5.0/3.0	5.5/4.5	4.0/3.0	Highly diverse	Usual asso-ciation of regionally expected species	Present	High	High	Balanced to slightly imbalanced
Intermediate	4.0/3.0	5.0/4.0	3.0/2.0	Moderately diverse	Some expected species	Very low in abundance	Moderate	Moderate	Moderately imbalanced
Limited	3.0/2.0	4.0/3.0		Uniform	Most regionally expected species absent	Absent	Low	Low	Severely imbalanced

- Dissolved oxygen means are applied as a minimum average over a 24-hour period.
- Daily minima are not to extend beyond 8 hours per 24-hour day. Lower dissolved oxygen minima may apply on a site-specific basis, when natural daily fluctuations below the mean are greater than the difference between the mean and minima of the appropriate criteria.
- Spring criteria to protect fish spawning periods are applied during that portion of the first half of the year when water temperatures are 63.0°F to 73.0°F.
- Quantitative criteria to support aquatic life attributes are described in the standards implementation procedures.
- Dissolved oxygen analyses and computer models to establish effluent limits for permitted discharges will normally be applied to mean criteria at steady-state, critical conditions.
- Determination of standards attainment for dissolved oxygen criteria is specified in §307.9(d)(6) (relating to Determination of Standards Attainment).

(ii) The dissolved oxygen criteria and associated critical low-flow values in Table 5 apply to unclassified streams which have significant aquatic life uses, and to streams which are specifically listed in Appendix D of §307.10 of this title. The criteria in Table 5 apply to all parts of Texas which are east of a line defined by Interstate Highway 35 and 35W from the Red River to the community of Moore in Frio County, and by U.S. Highway 57 from the community of Moore to the Rio Grande. The critical low-flow values in Table 5 (at the appropriate stream bedslope) will be utilized as headwater flows to determine discharge effluent limits necessary to achieve dissolved oxygen criteria. The required effluent limits will be those necessary to achieve each level of dissolved oxygen (as defined in §307.7(b)(3)(A)(i), Table 4) at or below an assigned or presumed aquatic life use. Presumed aquatic life uses will be in accordance with those required by §307.4(h) of this title. The dissolved oxygen criteria in Table 5 do not apply to tidal streams or streams which are specifically listed in Appendix A of §307.10 of this title.

(iii) The dissolved oxygen criteria in Table 5 are based upon data from the commission's least impacted stream study (Texas Aquatic Ecoregion Project). Results of this study indicate a strong dependent relationship for average summertime background dissolved oxygen concentrations and several hydrologic and physical stream characteristics - particularly bedslope (stream gradient) and stream flow. The dissolved oxygen criteria in Table 5 are derived from a multiple regression equation for the eastern portion of Texas as defined in §307.7(b)(3)(A)(ii) of this title. Further explanation of the development of the regression equation and its application will be contained in the standards implementation procedures.

Table 5

Critical low-flow values for dissolved oxygen for the eastern and southern Texas ecoregions as described in §307.7(b)(3)(A)(ii).

Bedslope (m/km)	6.0 DO (cfs)	5.0 DO (cfs)	4.0 DO (cfs)	3.0 DO (cfs)
0.1	*	18.3	3.0	0.5
0.2	*	7.7	1.3	0.2
0.3	28.6	4.7	0.8	0.1
0.4	20.0	3.3	0.5	0.1
0.5	15.2	2.5	0.4	0.1
0.6	12.1	2.0	0.3	0.1
0.7	10.0	1.6	0.3	0.0
0.8	8.4	1.4	0.2	0.0
0.9	7.3	1.2	0.2	0.0
1.0	6.4	1.0	0.2	0.0
1.1	5.7	0.9	0.2	0.0
1.2	5.1	0.8	0.1	0.0
1.3	4.6	0.8	0.1	0.0
1.4	4.2	0.7	0.1	0.0
1.5	3.9	0.6	0.1	0.0
1.6	3.6	0.6	0.1	0.0
1.7	3.3	0.5	0.1	0.0
1.8	3.1	0.5	0.1	0.0
2.1	2.5	0.4	0.1	0.0
2.4	2.2	0.4	0.1	0.0

* Flows are beyond the observed data used in the regression equation.

Dissolved oxygen criteria in this table are in mg/L and apply as 24-hour averages.

Dissolved oxygen criteria in this table apply at all stream flows at or above the indicated stream flow for each category.

(B) Oyster waters.

(i) A 1,000 foot buffer zone, measured from the shoreline at ordinary high tide, is established for all bay and gulf waters, except those contained in river or coastal basins as defined in §307.2 of this title (relating to Description of Standards). Fecal coliform content in buffer zones shall not exceed 200 colonies per 100 ml as a geometric mean of not less than five samples collected over not more than 30 days or equal or exceed 400 colonies per 100 ml in more than 10% of all samples taken during a 30-day period.

(ii) Median fecal coliform concentration in bay and gulf waters, exclusive of buffer zones, shall not exceed 14 colonies per 100 ml, with not more than 10% of all samples exceeding 43 colonies per 100 ml.

(iii) Oyster waters should be maintained so that concentrations of toxic materials do not cause edible species of clams, oysters, and mussels to exceed accepted guidelines for the protection of public health. Guidelines are provided by U.S. Food and Drug Administration Action Levels for molluscan shellfish.

(4) Additional criteria.

(A) Chemical parameters. Site-specific criteria for chloride, sulfate, and total dissolved solids are established as averages over an annual period for either a single sampling point or multiple sampling points.

(B) pH. Site-specific numerical criteria for pH are established as absolute minima and maxima.

(C) Temperature. Site-specific temperature criteria are established as absolute minima and maxima.

(D) Toxic materials. Criteria for toxic materials are established in §307.6 of this title (relating to Toxic Materials).

(5) Additional uses. Other basic uses, such as navigation, agricultural water supply, and industrial water will be maintained and protected for all water in the state in which these uses can be achieved.

Adopted June 14, 1995 Effective July 13, 1995

§307.8. Application of Standards.

(a) Low-flow conditions.

(1) The following standards do not apply below seven-day, two-year low-flows:

(A) site-specific criteria, as defined in §307.7 of this title (relating to Site-specific Criteria and Uses) and listed for each classified segment in Appendix A of §307.10 of this title (relating to Appendices A - E);

(B) numerical chronic criteria for toxic materials as established in §307.6 of this title (relating to Toxic Materials);

(C) total chronic toxicity restrictions as established in §307.6 of this title (relating to Toxic Materials); and

(D) maximum temperature differentials as established in §307.4(f) of this title (relating to General Criteria).

(E) dissolved oxygen criteria for unclassified waters, as established in §307.4(h)(1) of this title (relating to General Criteria).

(F) dissolved oxygen criteria for intermittent streams, as established in §307.4(h)(2) of this title (relating to General Criteria).

(G) fecal coliform criteria for unclassified waters, as established in §307.4(i) of this title (relating to General Criteria).

(2) Numerical acute criteria for toxic materials and preclusion of total acute toxicity as established in §307.6 of this title (relating to Toxic Materials) are applicable at all flow conditions.

(3) Low-flow criteria in Appendix B of §307.10 of this title are solely for the purpose of defining the flow conditions under which water quality standards apply to a given waterbody. Low-flow criteria listed in Appendix B of §307.10 of this title are not for the purpose of regulating flows in waterbodies in any manner or requiring that minimum flows be maintained in classified segments.

(4) Low-flow criteria defined in this section and listed in Appendix B of §307.10 of this title apply only to river basin and coastal basin waters. They do not apply to bay or gulf waters or reservoirs or estuaries.

(5) Seven-day, two-year low-flows (7Q2) and harmonic mean flows in Appendix B of §307.10 of this title were calculated from historical U.S. Geological Survey (USGS) daily streamflow records. The low-flow criterion was set at 0.1 of one cubic foot per second (ft^3/s) when the calculated 7Q2 was equal to or less than 0.1 of one ft^3/s.

(6) Flow values will be periodically recomputed to reflect alterations in the hydrologic characteristics of a segment, including reservoir construction, climatological trends, and other phenomena.

(7) The general criteria are applicable at all flow conditions except as specified in this section or in §307.4 of this title (relating to General Criteria).

(8) Specific human health criteria for concentrations in water to prevent contamination of fish and shellfish so as to ensure safety for human consumption, as established in §307.6 of this title (relating to Toxic Materials) do not apply at stream flows below the harmonic mean flow.

(b) Mixing zones. A reasonable mixing zone will be allowed at the discharge point of permitted discharges into surface water in the state, in accordance with the following provisions.

(1) The following portions of the standards do not apply within mixing zones:

(A) site-specific criteria, as defined in §307.7 of this title and listed for each classified segment in Appendix A of §307.10 of this title;

(B) numerical chronic aquatic life criteria for toxic materials as established in §307.6 of this title (relating to Toxic Materials);

(C) total chronic toxicity restrictions as established in §307.6 of this title (relating to Toxic Materials);

(D) maximum temperature differentials as established in §307.4(f) of this title (relating to General Criteria);

(E) dissolved oxygen criteria for unclassified waters, as established in §307.4(h)(1) of this title (relating to General Criteria);

(F) dissolved oxygen criteria for intermittent streams, as established in §307.4(h)(2) of this title (relating to General Criteria);

(G) fecal coliform criteria for unclassified waters, as established in §307.4(i) of this title (relating to General Criteria); and

(H) specific human health criteria for concentrations in water to prevent contamination of drinking water, fish and shellfish so as to ensure safety for human consumption, as established in §307.6 of this title (relating to Toxic Materials).

(2) Numerical acute aquatic life criteria for toxic materials and preclusion of total acute toxicity as established in §307.6 of this title (relating to Toxic Materials) are applicable in mixing zones. Acute criteria and acute total toxicity levels may be exceeded in small zones of initial dilution (ZIDs) at discharge points, but there shall be no lethality to aquatic organisms which move through a ZID. ZIDs shall not exceed the following sizes:

(A) 60 feet downstream and 20 feet upstream from a discharge point in a stream and river, and in addition, ZIDs in streams and rivers shall not encompass more than 25% of the volume of stream flow at or above seven-day, two-year low-flow conditions;

(B) a 25-foot radius in all directions (or equivalent volume or area for diffuser systems) from a discharge point in a lake or reservoir; and

(C) a 50-foot radius in all directions (or equivalent volume or area for diffuser systems) from a discharge point in a bay, tidal river, or estuary.

(3) Provisions of the general criteria in §307.4 of this title (relating to General Criteria) remain in effect in mixing zones unless specifically exempted in this section.

(4) Water quality standards do not apply to treated effluents at the immediate point of discharge--prior to any contact with either ambient waters or a dry streambed. However, effluent total toxicity requirements may be specified to preclude acute lethality near discharge points, or to preclude acute and chronic instream toxicity.

(5) Where a mixing zone is defined in a valid commission and/or National Pollutant Discharge Elimination System (NPDES) permit, the mixing zone defined in the permit will apply.

(6) Mixing zones shall not preclude passage of free-swimming or drifting aquatic organisms to the extent that aquatic life use is significantly affected, in accordance with guidelines specified in the standards implementation procedures.

(7) Mixing zones will not overlap unless it can be demonstrated that no applicable standards will be violated in the area of overlap. Existing and designated uses will not be impaired by the combined impact of a series of contiguous mixing zones.

(8) Mixing zones will not encompass an intake for a domestic drinking water supply. Thermal mixing zones are excepted from this provision unless elevated temperatures adversely affect drinking water treatment.

(9) Mixing zones will be individually specified for all permitted domestic discharges with a permitted monthly average flow equal to or exceeding one million gallons per day and for all permitted industrial discharges to water in the state (excepting discharges which consist entirely of stormwater runoff). For domestic discharges with permitted monthly average flows less than one million gallons per day, a small mixing zone will be assumed in accordance with guidelines for mixing zone sizes specified in the standards implementation procedures document; and the commission may require specified mixing zones as appropriate.

(10) The size of mixing zones for human health criteria may vary from the size of mixing zones for aquatic life criteria.

(c) Minimum analytical levels. The specified definition of permit compliance for a specific toxic material will not be lower than established minimum analytical levels, unless that toxic material is of particular concern in the receiving waters, or unless an effluent specific method detection limit has been developed in accordance with 40 CFR Part 136. Minimum analytical levels are listed in the standards implementation procedures.

(d) Once-through cooling water discharges. When a discharge of once-through cooling water does not measurably alter intake concentrations of a pollutant, then water-quality based effluent limits for that pollutant are not required. For facilities which intake and discharge cooling-water into

different waterbodies, this provision only applies if water quality and applicable water quality standards in the receiving water are maintained and protected.

Adopted June 14, 1995 Effective July 13, 1995

§307.9. Determination of Standards Attainment.

(a) Sampling locations.

(1) Representative samples to determine standards attainment will be collected at locations approved by the commission. To ensure comparability with past sampling data, samples will be collected at established monitoring stations. Monitoring stations may be established or discontinued by the commission.

(2) Field investigation samples may be collected at points not established or approved as standards attainment sampling locations at the discretion of the commission.

(b) Collection and preservation of water samples.

(1) To ensure that representative samples are collected and to minimize alterations prior to analysis, collection and preservation of attainment determination samples will be in accordance with procedures set forth in the most recently published edition of the book entitled *Standard Methods for the Examination of Water and Waste-water*, the most recent version of the quality assurance program plan for the commission, or other reliable procedures acceptable to the commission.

(2) Bacterial and temperature determinations will be conducted on samples or measurements taken within one foot of the surface. Depth collection procedures for chloride, sulfate, total dissolved solids, dissolved oxygen, and pH to determine standards attainment may vary depending on the waterbody being sampled. Where standards apply to the mixed surface layer, the depth of this layer is determined in accordance with procedures in the latest published edition of the *Texas Surface Water Quality Inventory*. Standards for chloride, sulfate, total dissolved solids, and pH are applicable to the mixed surface layer, but a single sample taken near the surface (at a depth of approximately one foot) normally provides an adequate representation of these parameters. For dissolved oxygen, the following procedures are generally applicable:

(A) Non-tidal flowing streams. In flowing streams, a profile should be obtained to determine if the water column is uniformly mixed. Samples shall be collected one foot below the water surface in streams exhibiting a vertically mixed water column. A depth-integrated sample shall be used to determine attainment in unmixed streams. Where depth is less than 1.5 feet, the collection depth shall be one-third of the water depth measured from the water surface.

(B) Impoundments. Representative samples shall be collected from the entire water column in the absence of thermal stratification. Collection of representative samples shall be confined to the epilimnion when an impoundment is thermally stratified.

(C) Bays. A depth-integrated (vertical composite) sample shall be collected from the surface to the natural bottom. Dredged areas shall not be considered part of the natural bottom.

(D) Tidal streams. A surface to bottom profile of DO, pH, conductivity, and temperature shall be obtained in all cases. Under conditions of density stratification, a composite sample collected from the mixed surface layer shall be used to determine standards attainment.

(3) Numerical aquatic life criteria for toxic materials are applicable to water samples collected at any depth. Numerical human health criteria are applicable to the average concentration from the surface to the bottom.

(c) Sample analysis.

(1) Numerical values. Numerical values in the water quality standards shall be determined by analytical procedures recommended in the most recently published edition of the book entitled *Standard Methods for the Examination of Water and Wastewater*, the quality assurance program plan for the commission, Title 40 Chapter 136 of the Code of Federal Regulations, or other reliable methods acceptable to the commission.

(2) Radioactivity. Measurements will be made on filtered samples to determine radioactivity associated with dissolved minerals.

(3) Toxicity. Bioassay techniques will be selected as testing situations dictate but will generally be conducted using representative sensitive organisms in accordance with §307.6 of this title (relating to Toxic Materials).

(4) Bacteria. Bacteriological levels shall be determined by either multiple-tube fermentation or membrane filter techniques.

(d) Sampling periodicity and evaluation.

(1) Chloride, sulfate, total dissolved solids (TDS). Standards attainment determinations shall be based on the average of measurements taken on at least four different dates within one year. Results from all monitoring stations within the segment will be averaged to allow for reasonable parametric gradients. TDS determinations may be based on measurements of specific conductance. Conversion factors are presented in the latest publication of the *Texas Surface Water Quality Inventory* or may be based on additional site-specific data.

(2) Radioactivity. The impact of radioactive discharges on the surface waters in Texas will be evaluated utilizing information developed by the Sanitary Engineering Research Laboratory at the University of Texas and presented in the June 30, 1960, report entitled, *Report on Radioactivity - Levels in Surface Waters - 1958-1960.*

(3) Bacteria. Standards attainment for fecal coliform bacteria will be determined as described in §307.7(b)(1) of this title (relating to Site-specific Uses and Criteria).

(4) Toxic materials. Specific numerical acute toxic criteria are applied as 24-hour averages, and specific numerical chronic toxic criteria are applied as seven-day averages. Human health criteria are applied as long term average exposure criteria designed to protect populations over a life time of 70 years. Standards attainment for human health criteria will be based on the average of a minimum of four samples collected over at least a one year period.

(5) Temperature and pH. Standards attainment will be evaluated for measurements or samples taken at a single point in time.

(6) Dissolved oxygen.

(A) Criteria for daily (24-hour) average concentrations will be compared to a time-weighted average of measurements taken over a 24-hour period.

(B) Criteria for minimum concentrations will be compared to individual measurements taken at night (from sunset until two hours after sunrise).

§307.10. Appendices A - E.

The following appendices are integral components of this chapter of the Texas Surface Water Quality Standards:

(1) Appendix A - Site-specific Uses and Criteria for Classified Segments.
(2) Appendix B - Low Flow Criteria.
(3) Appendix C - Segment Descriptions.
(4) Appendix D - Site-specific Receiving Water Assessments.
(5) Appendix E - Site-specific Criteria.

Appendix A - Site-specific Uses and Criteria for Classified Segments

The following tables identify the water uses and supporting numerical criteria for each of the state's classified segments. The tables are ordered by basin with the segment number and segment name given for each classified segment. Marine segments are those which are specifically titled as "tidal" in the segment name, plus all bays, estuaries and the Gulf of Mexico. The following descriptions denote how each numerical criterion is used subject to the provisions in §307.7 (relating to Site-specific Uses and Criteria), §307.8 (relating to Application of Standards), and §307.9 (Relating to Determination of Standards Attainment).

The criteria for Cl^{-1} (chloride), SO_4^{-2} (sulfate), and TDS (total dissolved solids) are listed in this appendix as maximum annual averages for the segment.

Dissolved oxygen criteria are listed as minimum 24-hour means at any site within the segment. Absolute minima and seasonal criteria are listed in §307.7 (relating to Site-specific Uses and Criteria). Dissolved oxygen criteria of 2.0 mg/L in this appendix are allowed a daily variation down to 1.5 mg/L for no more than 8 hours per 24-hour period. Dissolved oxygen criteria of 1.0 mg/L in this appendix will be considered minimum values at any time.

The pH criteria are listed as minimum and maximum values expressed in standard units at any site within the segment.

Fecal coliform criteria of 200 per 100 ml are applied as specified in §307.7(b)(1)(A) (relating to Site-specific Uses and Criteria). Fecal coliform criteria of 2,000 per 100 ml are applied as specified in §307.7(b)(1)(B) (relating to Site-specific Uses and Criteria).

The criteria for temperature are listed as maximum values at any site within the segment.

Footnotes are defined at the end of each basin or bay and estuary table, as appropriate.

CANADIAN RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
0101	Canadian River Below Lake Meredith	CR	H			1,975	760	5,000	5.0	6.5-9.0	200	95
0102	Lake Meredith	CR	E	PS		400	350	1,300	6.0	6.5-9.0	200	85
0103	Canadian River Above Lake Meredith	CR	H			1,050	540	4,500	5.0	6.5-9.0	200	95
0104	Wolf Creek	CR	H			420	125	1,125	5.0	6.5-9.0	200	93
0105	Rita Blanca Lake	NCR	L		WF*	100	90	325	3.0	6.5-9.0	200	85

* Segment 0105 - Rita Blanca Lake is designated as high quality waterfowl habitat.

RED RIVER BASIN		USES				CRITERIA						
		Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
Segment No.	SEGMENT NAME											
0201	Lower Red River	CR	H	PS		375	250	1,100	5.0	6.5-9.0	200	93
0202	Red River Below Lake Texoma	CR	H	PS		375	250	1,100	5.0	6.5-9.0	200	93
0203	Lake Texoma	CR	H	PS		600	300	1,500	5.0	6.5-9.0	200	92
0204	Red River Above Lake Texoma	CR	H			2,000	1,200	6,000	5.0	6.5-9.0	200	93
0205	Red River Below Pease River	CR	H			5,000	2,000	10,000	5.0	6.5-9.0	200	93
0206	Red River Above Pease River	CR	H			12,000	4,000	25,000	5.0	6.5-9.0	200	93
0207	Lower Prairie Dog Town Fork Red River	CR	H			37,000	5,300	46,200	5.0	6.5-9.0	200	93
0208	Lake Crook	CR	H	PS		75	150	350	5.0	6.5-9.0	200	90
0209	Pat Mayse Lake	CR	H	PS		100	175	350	5.0	6.5-9.0	200	90
0210	Farmers Creek Reservoir	CR	H	PS		200	60	550	5.0	6.5-9.0	200	93
0211	Little Wichita River	CR	H	PS		250	50	500	5.0	6.5-9.0	200	91
0212	Lake Arrowhead	CR	H	PS		250	50	500	5.0	6.5-9.0	200	93
0213	Lake Kickapoo	CR	H	PS		100	50	400	5.0	6.5-9.0	200	90
0214	Wichita River Below Diversion Lake	CR	H			1,800	800	5,000	5.0	6.5-9.0	200	90
0215	Diversion Lake	CR	H			1,800	1,100	5,000	5.0	6.5-9.0	200	90
0216	Wichita River Below Lake Kemp	CR	H			1,925	960	5,000	5.0	6.5-9.0	200	90
0217	Lake Kemp*	CR	H			7,000	2,500	15,000	5.0	6.5-9.0	200	93
0218	Wichita/North Fork Wichita River	CR	H			7,500	2,800	16,250	5.0	6.5-9.0	200	93
0219	Lake Wichita	CR	H			1,000	400	1,800	5.0	6.5-9.0	200	90
0220	Pease/North Fork Pease River	CR	H			12,000	3,500	30,000	5.0	6.5-9.0	200	91
0221	Middle Fork Pease River	CR	H			870	1,400	2,800	5.0	6.5-9.0	200	91

RED RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
0222	Salt Fork Red River	CR	H			400	1,400	3,000	5.0	6.5-9.0	200	93
0223	Greenbelt Lake	CR	H	PS		250	200	750	5.0	6.5-9.0	200	93
0224	North Fork Red River	CR	H			800	1,200	2,500	5.0	6.5-9.0	200	91
0225	McKinney Bayou	CR	L	PS		60	90	400	3.0	6.0-8.5	200	93
0226	South Fork Wichita River*	CR	H			12,000	3,650	31,000	5.0	6.5-9.0	200	93
0227	South Fork Pease River	CR	H			270	200	1,000	5.0	6.5-9.0	200	91
0228	Mackenzie Reservoir	CR	H	PS		20	160	350	5.0	6.5-9.0	200	90
0229	Upper Prairie Dog Town Fork Red River	CR	H			300	400	1,500	5.0	6.5-9.0	200	93

* It is anticipated that inorganic chemical quality in Segment 0217 and Segment 0226 should improve following completion and as a result of the operation of salinity control projects.

SULPHUR RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
0301	Sulphur River Below Wright Patman Lake	CR	H			120	100	500	5.0	6.0-8.5	200	90
0302	Wright Patman Lake	CR	H	PS		75	75	400	5.0	6.0-8.5	200	90
0303	Sulphur/South Sulphur River	CR	H			80	180	600	5.0	6.0-8.5	200	93
0304	Days Creek	CR	I			525	75	850	4.0	6.0-8.5	200	90
0305	North Sulphur River	CR	H			190	475	1,320	5.0	6.0-8.5	200	93
0306	Upper South Sulphur River	CR	I			80	180	600	4.0	6.5-8.0	200	93
0307	Cooper Lake	CR	H	PS		*	*	*	5.0	6.0-8.5	200	93

* Dissolved mineral criteria have not been derived for Segment 0307 - Cooper Lake since it is a new reservoir. In the interim, drinking water criteria apply.

CYPRESS CREEK BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
0401	Caddo Lake	CR	H	PS		25	20	100	5.0	6.0-8.5	200	90
0402	Big Cypress Creek Below Lake O' the Pines	CR	H	PS		100	50	300	5.0	6.0-8.5	200	93
0403	Lake O' the Pines	CR	H	PS		80	50	300	5.0	6.0-8.5	200	93
0404	Big Cypress Creek Below Lake Bob Sandlin	CR	I			100	100	500	4.0	6.0-8.5	200	90
0405	Lake Cypress Springs	CR	H	PS		100	100	500	5.0	6.0-8.5	200	93
0406	Black Bayou	CR	I	PS		80	50	300	4.0	6.0-8.5	200	90
0407	James' Bayou	CR	I	PS		100	50	300	4.0	6.0-8.5	200	90
0408	Lake Bob Sandlin	CR	H	PS		35	65	150	5.0	6.5-9.0	200	90
0409	Little Cypress Bayou (Creek)	CR	H	PS		100	35	300	5.0	5.5-8.5	200	90

SABINE RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
0501	Sabine River Tidal	CR	H						4.0	6.0-8.5	200	95
0503	Sabine River Below Toledo Bend Reservoir	CR	H	PS		30	25	120	5.0	6.0-8.5	200	91
0504	Toledo Bend Reservoir	CR	H	PS		70	30	240	5.0	6.0-8.5	200	93
0505	Sabine River Above Toledo Bend Reservoir	CR	H	PS		175	75	400	5.0	6.0-8.5	200	93
0506	Sabine River Below Lake Tawakoni	CR	H	PS		200	100	500	5.0	6.0-8.5	200	90
0507	Lake Tawakoni	CR	H	PS		20	35	200	5.0	6.0-8.5	200	93
0508	Adams Bayou Tidal	CR	H						4.0	6.0-8.5	200	95
0509	Murvaul Lake	CR	H	PS		150	75	500	5.0	6.5-9.0	200	92
0510	Lake Cherokee	CR	H	PS		75	50	250	5.0	6.0-8.5	200	95
0511	Cow Bayou Tidal	CR	H						4.0	6.0-8.5	200	95
0512	Lake Fork Reservoir	CR	H	PS		30	30	200	5.0	6.5-9.0	200	95
0513	Big Cow Creek	CR	H	PS		75	50	300	5.0	5.5-8.5	200	90
0514	Big Sandy Creek	CR	H	PS		75	50	300	5.0	6.0-8.5	200	90
0515	Lake Fork Creek	CR	H	PS		100	75	400	5.0	6.0-8.5	200	90

NECHES RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
0601	Neches River Tidal	CR	I						3.0	6.0-8.5	200	95
0602	Neches River Below B. A. Steinhagen Lake	CR	H	PS		50	30	150	5.0	6.0-8.5	200	91
0603	B. A. Steinhagen Lake	CR	H	PS		50	30	150	5.0	6.0-8.5	200	93
0604	Neches River Below Lake Palestine	CR	H	PS		50	30	150	5.0	6.0-8.5	200	91
0605	Lake Palestine	CR	H	PS		50	30	150	5.0	6.0-8.5	200	90
0606	Neches River Above Lake Palestine	CR	I	PS		50	30	150	4.0	6.0-8.5	200	95
0607	Pine Island Bayou	CR	H	PS		150	50	300	5.0	6.0-8.5	200	95
0608	Village Creek	CR	H	PS		150	75	300	5.0	6.0-8.5	200	90
0609	Angelina River Below Sam Rayburn Reservoir	CR	H	PS		70	40	250	5.0	6.0-8.5	200	90
0610	Sam Rayburn Reservoir	CR	H	PS		70	40	250	5.0	6.0-8.5	200	93
0611	Angelina River Above Sam Rayburn Reservoir	CR	H	PS		125	40	250	5.0	6.0-8.5	200	90
0612	Attoyac Bayou	CR	H	PS		75	50	150	5.0	6.0-8.5	200	90
0613	Lake Tyler/Lake Tyler East	CR	H	PS		30	30	150	5.0	6.5-9.0	200	93
0614	Lake Jacksonville	CR	H	PS		50	75	750	5.0	6.5-9.0	200	93

NECHES-TRINITY COASTAL BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
0701	Taylor Bayou Above Tidal	CR	I			400	100	1,100	4.0	6.5-9.0	200	95
0702	Intracoastal Waterway Tidal	CR	H						4.0	6.5-9.0	200	95
0703	Sabine-Neches Canal Tidal	CR	H						4.0	6.5-9.0	200	95
0704	Hillebrandt Bayou	CR	I			250	100	600	4.0	6.5-9.0	200	95

TRINITY RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
0801	Trinity River Tidal	CR	H						4.0	6.5-9.0	200	95
0802	Trinity River Below Lake Livingston	CR	H	PS		125	100	600	5.0	6.5-9.0	200	93
0803	Lake Livingston	CR	H	PS		150	50	500	5.0	6.5-9.0	200	93
0804	Trinity River Above Lake Livingston	CR	H			150	150	600	5.0	6.5-9.0	200	93
0805	Upper Trinity River	CR	H			175	175	850	5.0*	6.5-9.0	200	95
0806	West Fork Trinity River Below Lake Worth	CR	H	PS		100	100	500	5.0	6.5-9.0	200	93
0807	Lake Worth	CR	H	PS		100	100	500	5.0	6.5-9.0	200	91
0808	West Fork Trinity River Below Eagle Mountain Reservoir	CR	H	PS		100	100	500	5.0	6.5-9.0	200	91
0809	Eagle Mountain Reservoir	CR	H	PS		75	75	300	5.0	6.5-9.0	200	94
0810	West Fork Trinity River Below Bridgeport Reservoir	CR	H	PS		100	100	500	5.0	6.5-9.0	200	90
0811	Bridgeport Reservoir	CR	H	PS		75	75	300	5.0	6.5-9.0	200	90
0812	West Fork Trinity River Above Bridgeport Reservoir	CR	H	PS		100	100	500	5.0	6.5-9.0	200	88
0813	Houston County Lake	CR	H	PS		75	75	300	5.0	6.5-9.0	200	93
0814	Chambers Creek Above Richland-Chambers Reservoir	CR	H	PS		90	160	500	5.0	6.5-9.0	200	90
0815	Bardwell Reservoir	CR	H	PS		50	50	300	5.0	6.5-9.0	200	91
0816	Lake Waxahachie	CR	H	PS		50	50	300	5.0	6.5-9.0	200	91
0817	Navarro Mills Lake	CR	H	PS		50	75	300	5.0	6.5-9.0	200	90
0818	Cedar Creek Reservoir	CR	H	PS		50	50	200	5.0	6.0-8.5	200	93
0819	East Fork Trinity River	CR	I			75	50	400	4.0	6.5-9.0	200	91
0820	Lake Ray Hubbard	CR	H	PS		40	50	400	5.0	6.5-9.0	200	93
0821	Lavon Lake	CR	H	PS		80	60	400	5.0	6.5-9.0	200	93
0822	Elm Fork Trinity River Below Lewisville Lake	CR	H	PS		80	60	500	5.0	6.5-9.0	200	90

TRINITY RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
0823	Lewisville Lake	CR	H	PS		80	60	500	5.0	6.5-9.0	200	90
0824	Elm Fork Trinity River Above Ray Roberts Lake	CR	H	PS**		110	90	700	5.0	6.5-9.0	200	90
0825	Denton Creek	CR	H	PS		80	60	500	5.0	6.5-9.0	200	90
0826	Grapevine Lake	CR	H	PS		80	60	500	5.0	6.5-9.0	200	93
0827	White Rock Lake	CR	H			100	100	400	5.0	6.5-9.0	200	93
0828	Lake Arlington	CR	H	PS		100	100	300	5.0	6.5-9.0	200	95
0829	Clear Fork Trinity River Below Benbrook Lake	CR	H	PS		100	100	500	5.0	6.5-9.0	200	93
0830	Benbrook Lake	CR	H	PS		75	75	300	5.0	6.5-9.0	200	93
0831	Clear Fork Trinity River Below Lake Weatherford	CR	H	PS		100	100	500	5.0	6.5-9.0	200	90
0832	Lake Weatherford	CR	H	PS		100	100	500	5.0	6.5-9.0	200	93
0833	Clear Fork Trinity River Above Lake Weatherford	CR	H	PS		125	125	750	5.0	6.5-9.0	200	95
0834	Lake Amon G. Carter	CR	H	PS		150	150	400	5.0	6.5-9.0	200	93
0835	Richland Creek Below Richland-Chambers Reservoir	CR	H	PS		145	170	500	5.0	6.5-9.0	200	90
0836	Richland-Chambers Reservoir	CR	H	PS		75	110	400	5.0	6.5-9.0	200	91
0837	Richland Creek Above Richland-Chambers Reservoir	CR	H	PS		145	170	500	5.0	6.5-9.0	200	90
0838	Joe Pool Lake	CR	H	PS		100	100	300	5.0	6.5-9.0	200	90
0839	Elm Fork Trinity River Below Ray Roberts Lake	CR	H	PS		80	60	500	5.0	6.5-9.0	200	90
0840	Ray Roberts Lake	CR	H	PS		80	60	500	5.0	6.5-9.0	200	90
0841	Lower West Fork Trinity River	CR	I			175	175	850	4.0***	6.5-9.0	200	95

* The dissolved oxygen criterion in Segment 0805 shall be 3.5 mg/L when headwater flow at USGS Gaging Station 08048000 (located on the West Fork Trinity River in Fort Worth) is less than 80 ft^3/s.
** The public water supply use for Segment 0824 does not apply from a point 9.5 km (5.9 miles) downstream of the confluence of Pecan Creek in Cooke County up to FM 373 in Cooke County.
*** The dissolved oxygen criterion in Segment 0841 shall be 2.5 mg/L when headwater flow at USGS Gaging Station 08048000 (located on the West Fork Fort Worth) is less than 80.0 $ft.^3/s$.

TRINITY-SAN JACINTO COASTAL BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
0901	Cedar Bayou Tidal	CR	H						4.0	6.5-9.0	200	95
0902	Cedar Bayou Above Tidal	CR	H	PS		200	100	400	5.0	6.5-9.0	200	90

SAN JACINTO RIVER BASIN		USES				CRITERIA						
		Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
Segment No.	SEGMENT NAME											
1001	San Jacinto River Tidal	CR	H						4.0	6.5-9.0	200	95
1002	Lake Houston	CR	H	PS		100	50	200	5.0	6.5-9.0	200	90
1003	East Fork San Jacinto River	CR	H	PS		80	40	400	5.0	6.0-8.5	200	91
1004	West Fork San Jacinto River	CR	H	PS		80	40	300	5.0	6.5-9.0	200	95
1005	Houston Ship Channel/San Jacinto River Tidal	NCR	H						4.0	6.5-9.0	200	95
1006*	Houston Ship Channel Tidal				N/IS				2.0	6.5-9.0	168**	95
1007*	Houston Ship Channel/Buffalo Bayou Tidal				N/IS				1.0	6.5-9.0	168**	95
1008	Spring Creek	CR	H	PS		80	40	300	5.0	6.5-9.0	200	90
1009	Cypress Creek	CR	H	PS		80	40	300	5.0	6.5-9.0	200	90
1010	Caney Creek	CR	H	PS		50	40	300	5.0	6.0-8.5	200	90
1011	Peach Creek	CR	H	PS		50	40	200	5.0	6.0-8.5	200	90
1012	Lake Conroe	CR	H	PS		50	40	200	5.0	6.5-9.0	200	90
1013	Buffalo Bayou Tidal	CR	I						3.0	6.5-9.0	200	92
1014	Buffalo Bayou Above Tidal	CR	L			110	65	600	3.0	6.5-9.0	200	92
1015	Lake Creek	CR	H	PS		80	20	300	5.0	6.0-8.5	200	90
1016	Greens Bayou Above Tidal	CR	L			110	65	600	3.0	6.5-9.0	200	92
1017	Whiteoak Bayou Above Tidal	CR	L			110	65	600	3.0	6.5-9.0	200	92

* Chronic numerical toxic criteria and chronic total toxicity requirements apply to Segments 1006 and 1007.

** 30-day geometric mean enterococci density (colonies/100ml); the maximum enterococci density in 10% of samples in a 30-day period if greater than 10 samples or in a single sample if fewer than 10 samples are collected is 500 colonies/100ml.

SAN JACINTO-BRAZOS COASTAL BASIN		USES				CRITERIA						
		Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
Segment No.	SEGMENT NAME											
1101	Clear Creek Tidal	CR	H						4.0	6.5-9.0	200	95
1102	Clear Creek Above Tidal	CR	H			200	100	600	5.0	6.5-9.0	200	95
1103	Dickinson Bayou Tidal	CR	H						4.0	6.5-9.0	200	95
1104	Dickinson Bayou Above Tidal	CR	I			200	100	600	4.0	6.5-9.0	200	90
1105	Bastrop Bayou Tidal	CR	H						4.0	6.5-9.0	200	95
1107	Chocolate Bayou Tidal	CR	H						4.0	6.5-9.0	200	95
1108	Chocolate Bayou Above Tidal	CR	H			150	50	600	5.0	6.5-9.0	200	90
1109	Oyster Creek Tidal	CR	H						4.0	6.5-9.0	200	95
1110	Oyster Creek Above Tidal	CR	H	PS		300	150	750	5.0	6.5-9.0	200	90
1111	Old Brazos River Channel Tidal	CR	H						4.0	6.5-9.0	200	95
1113	Armand Bayou Tidal	CR	H						4.0	6.5-9.0	200	95

BRAZOS RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (pF)
1201	Brazos River Tidal	CR	H	PS*					4.0	6.5-9.0	200	95
1202	Brazos River Below Navasota River	CR	H	PS		300	200	750	5.0	6.5-9.0	200	95
1203	Whitney Lake	CR	H	PS		670	320	1,500	5.0	6.5-9.0	200	93
1204	Brazos River Below Lake Granbury	CR	H			750	380	1,600	5.0	6.5-9.0	200	91
1205	Lake Granbury	CR	H	PS		1,000	600	2,500	5.0	6.5-9.0	200	93
1206	Brazos River Below Possum Kingdom Lake	CR	H			1,020	500	2,300	5.0	6.5-9.0	200	90
1207	Possum Kingdom Lake	CR	H	PS		1,200	500	3,500	5.0	6.5-9.0	200	93
1208	Brazos River Above Possum Kingdom Lake	CR	H			5,000	2,000	12,000	5.0	6.5-9.0	200	95
1209	Navasota River Below Lake Limestone	CR	H	PS		140	100	600	5.0	6.5-9.0	200	93
1210	Lake Mexia	CR	H	PS		100	50	400	5.0	6.5-9.0	200	90
1211	Yegua Creek	CR	H	PS		140	130	640	5.0	6.5-9.0	200	91
1212	Somerville Lake	CR	H	PS		75	100	300	5.0	6.5-9.0	200	93
1213	Little River	CR	H	PS		75	75	400	5.0	6.5-9.0	200	90
1214	San Gabriel River	CR	H	PS		50	45	500	5.0	6.5-9.0	200	91
1215	Lampasas River Below Stillhouse Hollow Lake	CR	H	PS		100	75	500	5.0	6.5-9.0	200	91
1216	Stillhouse Hollow Lake	CR	E	PS		100	75	500	6.0	6.5-9.0	200	93
1217	Lampasas River Above Stillhouse Hollow Lake	CR	H			480	80	840	5.0	6.5-9.0	200	91
1218	Nolan Creek/South Nolan Creek	CR	H			100	75	500	5.0	6.5-9.0	200	93
1219	Leon River Below Belton Lake	CR	H	PS		150	75	500	5.0	6.5-9.0	200	91
1220	Belton Lake	CR	H	PS		100	75	500	5.0	6.5-9.0	200	93
1221	Leon River Below Proctor Lake	CR	H	PS		150	75	500	5.0	6.5-9.0	200	90
1222	Proctor Lake	CR	H	PS		200	75	500	5.0	6.5-9.0	200	93

BRAZOS RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
1223	Leon River Below Leon Reservoir	CR	H	PS		480	130	1,240	5.0	6.5-9.0	200	93
1224	Leon Reservoir	CR	H	PS		150	75	500	5.0	6.5-9.0	200	93
1225	Waco Lake	CR	H	PS		60	60	400	5.0	6.5-9.0	200	93
1226	North Bosque River	CR	H	PS		75	60	540	5.0	6.5-9.0	200	91
1227	Nolan River	CR	I			75	75	500	4.0	6.5-9.0	200	95
1228	Lake Pat Cleburne	CR	H	PS		100	100	300	5.0	6.5-9.0	200	93
1229	Paluxy River/North Paluxy River	CR	H	PS		35	65	400	5.0	6.5-9.0	200	91
1230	Lake Palo Pinto	CR	H	PS		100	100	450	5.0	6.5-9.0	200	93
1231	Lake Graham	CR	H	PS		200	75	500	5.0	6.5-9.0	200	95
1232	Clear Fork Brazos River	CR	H			1,250	2,200	4,900	5.0	6.5-9.0	200	93
1233	Hubbard Creek Reservoir	CR	H	PS		350	75	750	5.0	6.5-9.0	200	93
1234	Lake Cisco	CR	H	PS		75	75	350	5.0	6.5-9.0	200	93
1235	Lake Stamford	CR	H	PS		580	400	2,100	5.0	6.5-9.0	200	93
1236	Fort Phantom Hill Reservoir	CR	H	PS		130	150	550	5.0	6.5-9.0	200	93
1237	Lake Sweetwater	CR	H	PS		250	225	730	5.0	6.5-9.0	200	93
1238	Salt Fork Brazos River	CR	H			23,000	4,000	40,000	5.0	6.5-9.0	200	93
1239	White River	CR	H	PS		100	100	500	5.0	6.5-9.0	200	92
1240	White River Lake	CR	H	PS		150	100	450	5.0	6.5-9.0	200	89
1241	Double Mountain Fork Brazos River	CR	H			2,500	2,400	5,500	5.0	6.5-9.0	200	95
1242	Brazos River Below Whitney Lake	CR	H	PS		450	250	1,400	5.0	6.5-9.0	200	95
1243	Salado Creek	CR	H	PS		50	50	300	5.0	6.5-9.0	200	90
1244	Brushy Creek	CR	H	PS		125	150	600	5.0	6.5-9.0	200	91

BRAZOS RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
1245	Upper Oyster Creek	CR	I	PS		140	75	1,070	4.0	6.5-9.0	200	95
1246	Middle Bosque/South Bosque River	CR	H			45	260	700	5.0	6.5-9.0	200	91
1247	Granger Lake	CR	H	PS		25	30	290	5.0	6.5-9.0	200	90
1248	San Gabriel/North Fork San Gabriel River	CR	H	PS		35	30	350	5.0	6.5-9.0	200	95
1249	Lake Georgetown	CR	H	PS		20	20	280	5.0	6.5-9.0	200	90
1250	South Fork San Gabriel River	CR	H	PS		30	35	330	5.0	6.5-9.0	200	95
1251	North Fork San Gabriel River	CR	H	PS		35	30	330	5.0	6.5-9.0	200	91
1252	Lake Limestone	CR	H	PS		35	20	200	5.0	6.5-9.0	200	90
1253	Navasota River Below Lake Mexia	CR	H	PS		440	150	1,350	5.0	6.5-9.0	200	93
1254	Aquilla Reservoir	CR	H	PS		110	310	600	5.0	6.5-9.0	200	90
1255	Upper North Bosque River	CR	I			75	60	540	4.0	6.5-9.0	200	91

The public supply designation for Segment 1201 only applies from the upstream boundary to 300 meters (330 yards) downstream of SH 332 in Brazoria County.

BRAZOS-COLORADO COASTAL BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
1301	San Bernard River Tidal	CR	H						4.0	6.5-9.0	200	95
1302	San Bernard River Above Tidal	CR	H	PS		100	50	500	5.0	6.5-9.0	200	90
1304	Caney Creek Tidal	CR	H						4.0	6.5-9.0	200	95
1305	Caney Creek Above Tidal	CR	H			200	75	1,000	5.0	6.5-9.0	200	90

COLORADO RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ºF)
1401	Colorado River Tidal	CR	H						4.0	6.5-9.0	200	95
1402	Colorado River Below La Grange	CR	H	PS		90	60	450	5.0	6.5-9.0	200	95
1403	Lake Austin	CR	H	PS		85	60	375	5.0	6.5-9.0	200	90
1404	Lake Travis	CR	E	PS		85	60	375	6.0	6.5-9.0	200	90
1405	Marble Falls Lake	CR	H	PS		115	70	450	5.0	6.5-9.0	200	94
1406	Lake Lyndon B. Johnson	CR	H	PS		115	70	450	5.0	6.5-9.0	200	94
1407	Inks Lake	CR	H	PS		135	95	525	5.0	6.5-9.0	200	90
1408	Lake Buchanan	CR	H	PS		145	95	525	5.0	6.5-9.0	200	90
1409	Colorado River Above Lake Buchanan	CR	H	PS		200	155	875	5.0	6.5-9.0	200	91
1410	Colorado River Below O. H. Ivie Reservoir	CR	H	PS		500	455	1,475	5.0	6.5-9.0	200	91
1411	E. V. Spence Reservoir	CR	H	PS		950	450	1,500	5.0	6.5-9.0	200	93
1412	Colorado River Below Lake J. B. Thomas	CR	H			11,000	2,500	20,000	5.0	6.5-9.0	200	93
1413	Lake J. B. Thomas	CR	H	PS		80	110	500	5.0	6.5-9.0	200	90
1414	Pedernales River	CR	H	PS		105	50	525	5.0	6.5-9.0	200	91
1415	Llano River	CR	H	PS		45	25	300	5.0	6.5-9.0	200	91
1416	San Saba River	CR	H	PS		40	30	425	5.0	6.5-9.0	200	90
1417	Lower Pecan Bayou	CR	H			310	120	1,025	5.0	6.5-9.0	200	90
1418	Lake Brownwood	CR	H	PS		150	100	500	5.0	6.5-9.0	200	90
1419	Lake Coleman	CR	H	PS		150	100	500	5.0	6.5-9.0	200	93
1420	Pecan Bayou Above Lake Brownwood	CR	H	PS		500	500	1,500	5.0	6.5-9.0	200	90
1421	Concho River	CR	H	PS		775	425	1,600	5.0	6.5-9.0	200	90
1422	Lake Nasworthy	CR	H	PS		450	400	1,500	5.0	6.5-9.0	200	93

COLORADO RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (pF)
1423	Twin Buttes Reservoir	CR	H	PS		200	100	700	5.0	6.5-9.0	200	90
1424	Middle Concho/South Concho River	CR	H	PS		150	150	700	5.0	6.5-9.0	200	90
1425	O. C. Fisher Lake	CR	H	PS		150	150	700	5.0	6.5-9.0	200	90
1426	Colorado River Below E. V. Spence Reservoir	CR	H	PS		610	980	2,000	5.0	6.5-9.0	200	91
1427	Onion Creek	CR	H	PS/AP		50	50	300	5.0	6.5-9.0	200	90
1428	Colorado River Below Town Lake	CR	E	PS		90	60	425	6.0*	6.5-9.0	200	95
1429	Town Lake**	CR	H	PS		75	60	375	5.0	6.5-9.0	200	90
1430	Barton Creek	CR	H	AP		40	40	500	5.0	6.5-9.0	200	90
1431	Mid Pecan Bayou	CR				410	120	1100	2.0	6.5-9.0	200	90
1432	Upper Pecan Bayou	CR	H	PS		190	140	760	5.0	6.5-9.0	200	90
1433	O. H. Ivie Reservoir	CR	H	PS		***	***	***	5.0	6.5-9.0	200	93
1434	Colorado River Above La Grange	CR	E	PS		90	60	425	6.0	6.5-9.0	200	95

* Dissolved oxygen criterion of 6.0 mg/L only applies at stream flows greater than or equal to 150 cfs as measured at USGS gage number 8158000 located in Travis County upstream from U.S. Highway 183. Dissolved oxygen criteria of 5.0 mg/L will apply to stream flows less than 150 cfs and greater than or equal to the 7Q2 for the segment.

** While Segment 1429 may exhibit quality characteristics which would make it suitable for contact recreation, the use is prohibited by local regulation for reasons unrelated to water quality.

*** Numerical criteria for chloride, sulfate, and total dissolved solids cannot be established at this time for this new reservoir.

COLORADO-LAVACA COASTAL BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
1501	Tres Palacios Creek Tidal	CR	E						5.0	6.5-9.0	200	95
1502	Tres Palacios Creek Above Tidal	CR	H			250	100	600	5.0	6.5-9.0	200	90

LAVACA RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
1601	Lavaca River Tidal	CR	H						4.0	6.5-9.0	200	95
1602	Lavaca River Above Tidal	CR	H	PS		150	75	500	5.0	6.5-9.0	200	91
1603	Navidad River Tidal	CR	H	PS					4.0	6.5-9.0	200	91
1604	Lake Texana	CR	H	PS		80	25	450	5.0	6.5-9.0	200	93
1605	Navidad River Above Lake Texana	CR	H	PS		100	30	550	5.0	6.5-9.0	200	91

LAVACA-GUADALUPE COASTAL BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
1701	Victoria Barge Canal Tidal	NCR	H						4.0	6.5-9.0	200	95

GUADALUPE RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (pF)
1801	Guadalupe River Tidal	CR	E						5.0	6.5-9.0	200	95
1803	Guadalupe River Below San Marcos River	CR	H	PS		100	50	400	5.0	6.5-9.0	200	93
1804	Guadalupe River Below Comal River	CR	H	PS		80	50	400	5.0	6.5-9.0	200	90
1805	Canyon Lake	CR	E	PS/AP		40	40	400	6.0	6.5-9.0	200	90
1806	Guadalupe River Above Canyon Lake	CR	E	PS		35	30	375	6.0	6.5-9.0	200	90
1807	Coleto Creek	CR	H	PS		250	100	500	5.0	6.5-9.0	200	93
1808	Lower San Marcos River	CR	H	PS		60	50	400	5.0	6.5-9.0	200	90
1809	Lower Blanco River	CR	H	PS		40	50	400	5.0	6.5-9.0	200	92
1810	Plum Creek	CR	H			350	150	1,120	5.0	6.5-9.0	200	90
1811	Comal River	CR	H	PS		25	30	400	5.0	6.5-9.0	200	90
1812	Guadalupe River Below Canyon Dam	CR	E	PS/AP		40	40	400	6.0	6.5-9.0	200	90
1813	Upper Blanco River	CR	E	PS/AP		30	35	400	6.0	6.5-9.0	200	92
1814	Upper San Marcos River *	CR	E			25	25	380	6.0	6.5-9.0	200	80
1815	Cypress Creek	CR	E	PS		20	20	350	6.0	6.5-9.0	200	86
1816	Johnson Creek	CR	E	PS		40	20	350	6.0	6.5-9.0	200	86
1817	North Fork Guadalupe River	CR	E	PS		20	20	350	6.0	6.5-9.0	200	86
1818	South Fork Guadalupe River	CR	E	PS		20	20	350	6.0	6.5-9.0	200	86

* Segment 1814 - Upper San Marcos River is assigned a low-flow criterion of 58 ft^3/sec for the application of water quality standards criteria in the same manner as a 7Q2 critical low-flow.

SAN ANTONIO RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (pF)
1901	Lower San Antonio River	CR	H			180	140	750	5.0	6.5-9.0	200	90
1902	Lower Cibolo Creek	CR	H			170	275	900	5.0	6.5-9.0	200	90
1903	Medina River Below Medina Diversion Lake	CR	H	PS*		120	120	700	5.0	6.5-9.0	200	90
1904	Medina Lake	CR	H	PS/AP		80	75	350	5.0	6.5-9.0	200	88
1905	Medina River Above Medina Lake	CR	E	PS		50	100	400	6.0	6.5-9.0	200	88
1906	Lower Leon Creek	CR	H	PS**		120	120	700	5.0	6.5-9.0	200	95
1907	Upper Leon Creek	CR	H	PS/AP		55	240	550	5.0	6.5-9.0	200	95
1908	Upper Cibolo Creek	CR	H	PS/AP		50	50	400	5.0	6.5-9.0	200	90
1909	Medina Diversion Lake	CR	H	PS/AP		50	75	400	5.0	6.5-9.0	200	90
1910	Salado Creek	CR	H	PS/AP		140	200	600	5.0	6.5-9.0	200	90
1911	Upper San Antonio River	CR	H			95	95	620	5.0	6.5-9.0	200	90
1912	Medio Creek	CR	I			100	125	550	4.0	6.5-9.0	200	95
1913	Mid Cibolo Creek	CR	L			80	90	650	3.0	6.5-9.0	200	90

* For Segment 1903, the public supply designation does not apply from the confluence of the San Antonio River in Bexar County to a point 2.5 kilometers (1.5 miles) upstream of the confluence of Leon Creek.
** For Segment 1906, the public supply designation does not apply from the confluence of the Medina River in Bexar County to a point 4.8 kilometers (3.0 miles) upstream.

SAN ANTONIO-NUECES COASTAL BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
2001	Mission River Tidal	CR	H						4.0	6.5-9.0	200	95
2002	Mission River Above Tidal	CR	H			850	100	2,000	5.0	6.5-9.0	200	95
2003	Aransas River Tidal	CR	H						4.0	6.5-9.0	200	95
2004	Aransas River Above Tidal	CR	H			300	50	600	5.0	6.5-9.0	200	95

NUECES RIVER BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ºF)
2101	Nueces River Tidal	CR	E						5.0	6.5-9.0	200	95
2102	Nueces River Below Lake Corpus Christi	CR	H	PS		250	250	500	5.0	6.5-9.0	200	91
2103	Lake Corpus Christi	CR	H	PS		250	250	500	5.0	6.5-9.0	200	93
2104	Nueces River Above Frio River	CR	H	PS		700	300	1,500	5.0	6.5-9.0	200	90
2105	Nueces River Above Holland Dam	CR	H	PS		200	200	900	5.0	6.5-9.0	200	90
2106	Nueces/Lower Frio River	CR	H	PS		250	250	500	5.0	6.5-9.0	200	90
2107	Atascosa River	CR	H	PS		600	500	1,500	5.0	6.5-9.0	200	90
2108	San Miguel Creek	CR	H	PS		700	700	2,000	5.0	6.5-9.0	200	95
2109	Leona River	CR	H	PS/AP		650	500	2,000	5.0	6.5-9.0	200	90
2110	Lower Sabinal River	CR	H	PS		200	75	700	5.0	6.5-9.0	200	90
2111	Upper Sabinal River	CR	H	PS/AP		40	75	500	5.0	6.5-9.0	200	90
2112	Upper Nueces River	CR	H	PS/AP		40	40	300	5.0	6.5-9.0	200	90
2113	Upper Frio River	CR	E	PS/AP		25	30	300	6.0	6.5-9.0	200	90
2114	Hondo Creek	CR	H	PS/AP		30	60	300	5.0	6.5-9.0	200	90
2115	Seco Creek	CR	H	PS/AP		30	70	350	5.0	6.5-9.0	200	90
2116	Choke Canyon Reservoir	CR	H	PS		250	250	500	5.0	6.5-9.0	200	90
2117	Frio River Above Choke Canyon Reservoir	CR	H	PS/AP		620	380	1,700	5.0	6.5-9.0	200	90

NUECES-RIO GRANDE COASTAL BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
2201	Arroyo Colorado Tidal	CR	H						4.0	6.5-9.0	200	95
2202	Arroyo Colorado Above Tidal	CR	I			1,200	1,000	4,000	4.0	6.5-9.0	200	95
2203	Petronila Creek Tidal	CR	H						4.0	6.5-9.0	200	95
2204	Petronila Creek Above Tidal*	CR	I			1,500	500	4,000	4.0	6.5-9.0	200	95

* High concentrations of chlorides, sulfates and total dissolved solids in Segment 2204 are due to past brine discharges which were halted effective 1/10/87 by order of the Texas Railroad Commission. Water quality is expected to improve as residual brines are flushed from the system. These estimated criteria are subject to modification as improvement in water quality is documented.

RIO GRANDE BASIN		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ºF)
2301	Rio Grande Tidal	CR	E						5.0	6.5-9.0	200	95
2302	Rio Grande Below Falcon Reservoir	CR	H	PS		270	350	880	5.0	6.5-9.0	200	90
2303	International Falcon Reservoir	CR	H	PS		140	300	700	5.0	6.5-9.0	200	93
2304	Rio Grande Below Amistad Reservoir	CR	H	PS		200	300	1,000	5.0	6.5-9.0	200	95
2305	International Amistad Reservoir	CR	H	PS		150	270	800	5.0	6.5-9.0	200	88
2306	Rio Grande Above Amistad Reservoir	CR	H	PS		300	570	1,550	5.0	6.5-9.0	200	93
2307	Rio Grande Below Riverside Diversion Dam	CR	H	PS		300	550	1,500	5.0*	6.5-9.0	200	93
2308	Rio Grande Below International Dam	NCR	L			250	450	1,400	3.0	6.5-9.0	2,000	95
2309	Devils River	CR	E	PS		30	20	300	6.0	6.5-9.0	200	90
2310	Lower Pecos River	CR	H	PS		1,000	500	3,000	5.0	6.5-9.0	200	92
2311	Upper Pecos River	CR	H			7,000	3,500	15,000	5.0	6.5-9.0	200	92
2312	Red Bluff Reservoir	CR	H			6,000	3,500	15,000	5.0	6.5-9.0	200	90
2313	San Felipe Creek	CR	H	PS		25	30	500	5.0	6.5-9.0	200	90
2314	Rio Grande Above International Dam	CR	H	PS		340	600	1,800	5.0	6.5-9.0	200	92

* The dissolved oxygen criterion in the upper reach of Segment 2307 (Riverside Diversion Dam to the end of the rectified channel below Fort Quitman) shall be 3.0 mg/L when headwater flow over the Riverside Diversion Dam is less than 35 ft^3/s.

BAYS AND ESTUARIES		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (ÞF)
2411	Sabine Pass	CR	E/O						5.0	6.5-9.0	14	95
2412	Sabine Lake	CR	H/O						4.0	6.5-9.0	14	95
2421	Upper Galveston Bay	CR	H/O						4.0	6.5-9.0	14	95
2422	Trinity Bay	CR	H/O						4.0	6.5-9.0	14	95
2423	East Bay	CR	H/O						4.0	6.5-9.0	14	95
2424	West Bay	CR	H/O						4.0	6.5-9.0	14	95
2425	Clear Lake	CR	H						4.0	6.5-9.0	200	95
2426	Tabbs Bay	CR	H						4.0	6.5-9.0	200	95
2427	San Jacinto Bay	CR	H						4.0	6.5-9.0	200	95
2428	Black Duck Bay	CR	H						4.0	6.5-9.0	200	95
2429	Scott Bay	CR	H						4.0	6.5-9.0	200	95
2430	Burnett Bay	CR	H						4.0	6.5-9.0	200	95
2431	Moses Lake	CR	H						4.0	6.5-9.0	200	95
2432	Chocolate Bay	CR	H/O						4.0	6.5-9.0	14	95
2433	Bastrop Bay/Oyster Lake	CR	H/O						4.0	6.5-9.0	14	95
2434	Christmas Bay	CR	H/O						4.0	6.5-9.0	14	95
2435	Drum Bay	CR	H/O						4.0	6.5-9.0	14	95
2436	Barbours Cut	CR	H						4.0	6.5-9.0	200	95
2437	Texas City Ship Channel	NCR	H						4.0	6.5-9.0	200	95
2438	Bayport Channel	NCR	H						4.0	6.5-9.0	200	95
2439	Lower Galveston Bay	CR	H/O						4.0	6.5-9.0	14	95
2441	East Matagorda Bay	CR	E/O						5.0	6.5-9.0	14	95

BAYS AND ESTUARIES		USES				CRITERIA						
		Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (pF)
Segment No.	SEGMENT NAME											
2442	Cedar Lakes	CR	H/O						4.0	6.5-9.0	14	95
2451	Matagorda Bay/Powderhorn Lake	CR	E/O						5.0	6.5-9.0	14	95
2452	Tres Palacios Bay/Turtle Bay	CR	E/O						5.0	6.5-9.0	14	95
2453	Lavaca Bay/Chocolate Bay	CR	E/O						5.0	6.5-9.0	14	95
2454	Cox Bay	CR	E/O						5.0	6.5-9.0	14	95
2455	Keller Bay	CR	E/O						5.0	6.5-9.0	14	95
2456	Carancahua Bay	CR	E/O						5.0	6.5-9.0	14	95
2461	Espiritu Santo Bay	CR	E/O						5.0	6.5-9.0	14	95
2462	San Antonio Bay/Hynes Bay/Guadalupe Bay	CR	E/O						5.0	6.5-9.0	14	95
2463	Mesquite Bay/Carlos Bay/Ayres Bay	CR	E/O						5.0	6.5-9.0	14	95
2471	Aransas Bay	CR	E/O						5.0	6.5-9.0	14	95
2472	Copano Bay/Port Bay/Mission Bay	CR	E/O						5.0	6.5-9.0	14	95
2473	St. Charles Bay	CR	E/O						5.0	6.5-9.0	14	95
2481	Corpus Christi Bay	CR	E/O						5.0	6.5-9.0	14	95
2482	Nueces Bay	CR	E/O						5.0	6.5-9.0	14	95
2483	Redfish Bay	CR	E/O						5.0	6.5-9.0	14	95
2484	Corpus Christi Inner Harbor	NCR	I						3.0	6.5-9.0	200	95
2485	Oso Bay	CR	E/O						5.0	6.5-9.0	14	95
2491	Laguna Madre	CR	E/O						5.0	6.5-9.0	14	95
2492	Baffin Bay/Alazan Bay/Cayo del Grullo/Laguna Salada	CR	H/O						4.0	6.5-9.0	14	95
2493	South Bay	CR	E/O						5.0	6.5-9.0	14	95
2494	Brownsville Ship Channel	NCR	E						5.0	6.5-9.0	200	95

GULF OF MEXICO		USES				CRITERIA						
Segment No.	SEGMENT NAME	Recreation	Aquatic Life	Domestic Water Supply	Other	Cl^{-1} (mg/L)	SO_4^{-2} (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Fecal Coliform #/100ml	Temperature (pF)
2501	Gulf of Mexico	CR	E/O						5.0	6.5-9.0	14	95

Appendix B - Low-Flow Criteria

The table contains seven-day, two-year low flow (7Q2) and harmonic mean flow values, as defined in §307.3 of this title, for U.S. Geological Survey (USGS) gages listed in Commission stream segment order. Where multiple gages are listed for a segment, the gages are sequenced from a downstream to upstream order. The listed county names provide the general location of the USGS gaging stations. Specific gage locations may be obtained from the report, Water Resource Data - Texas, which is published on an annual basis by the USGS. The flow values are calculated for each gaging station for the listed period of record from USGS data that is currently in the Commission computerized data base. The flow values presented in Appendix B are intended as guidelines and may be recalculated as additional data become available. Low flow values utilized in conjunction with Commission regulatory actions (such as discharge permits) may be derived from data obtained at other USGS gaging stations not presented in the table, Commission monitoring stations, drainage basin comparisons, interpolations or best available information.

Segment	USGS Gage	County	Period of Record Start	End	7Q2 (ft^3/s)	Harmonic Mean (ft^3/s)
0101	7228000	HEMPHILL	1969	1989	0.2	0.9
0103	7227500	POTTER	1965	1989	0.7	1.7
0104	7235000	LIPSCOMB	1970	1989	0.3	1.0
0201	7337000	BOWIE	1970	1989	1686.1	3848.2
0202	7336820	BOWIE	1970	1989	1053.1	4163.2
0202	7335500	LAMAR	1970	1987	691.5	2782.3
0202	7331600	GRAYSON	1969	1989	143.1	555.7
0204	7315500	MONTAGUE	1970	1989	199.1	453.1
0205	7308500	WICHITA	1969	1989	41.0	14.6
0206	7299570	HARDEMAN	1962	1982	0.1	0.6
0207	7299540	CHILDRESS	1970	1989	0.2	1.0
0211	7314900	CLAY	1975	1989	0.1*	1.5
0214	7312700	CLAY	1969	1989	54.9	122.5
0214	7312500	WICHITA	1969	1989	24.0	63.3
0216	7312100	BAYLOR	1969	1989	0.5	1.7
0218	7311700	KNOX	1970	1989	6.2	13.0
0218	7311648	FOARD	1971	1976	2.4	4.7
0218	7311622	FOARD	1971	1976	5.6	10.7

Segment	USGS Gage	County	Period of Record Start	End	7Q2 (ft^3/s)	Harmonic Mean (ft^3/s)
0220	7308200	WILBARGER	1970	1982	0.1*	0.6
0220	7307800	COTTLE	1969	1989	0.5	1.6
0222	7300000	COLLINGSWORTH	1969	1989	2.5	9.2
0224	7301300	WHEELER	1970	1989	0.1*	0.3
0226	7311800	KNOX	1970	1989	0.1*	1.2
0226	7311790	KING	1972	1979	0.8	2.6
0229	7297910	ARMSTRONG	1969	1989	0.1*	0.3
0303	7343200	FRANKLIN	1971	1989	0.7	0.9
0303	7342500	DELTA	1969	1989	5.3	0.9
0305	7343000	DELTA	1969	1989	0.1*	0.6
0306	7342470	HUNT	1980	1989	1.0	3.2
0402	7346000	MARION	1980	1989	7.1	27.5
0404	7344500	TITUS	1969	1989	3.6	12.1
0409	7346070	MARION	1975	1989	0.1	0.6
0503	8030500	NEWTON	1969	1989	958.1	2870.9
0503	8028500	NEWTON	1969	1989	611.4	1920.3
0503	8026000	NEWTON	1969	1989	228.1	831.8
0503	8025360	NEWTON	1972	1989	137.0	373.9
0505	8022040	PANOLA	1979	1989	44.7	222.8
0506	8020000	GREGG	1969	1989	33.4	168.4
0506	8018500	WOOD	1969	1989	3.5	2.3
0506	8017410	VAN ZANDT	1971	1989	0.3	0.4
0513	8029500	NEWTON	1969	1989	30.0	56.9
0514	8019500	UPSHUR	1969	1989	12.3	38.5
0515	8019000	WOOD	1969	1989	0.5	1.3
0602	8041000	JASPER	1969	1989	1780.0	2515.3
0602	8040500	JASPER	1970	1989	1411.0	1697.5

Segment	USGS Gage	County	Period of Record Start	End	7Q2 (ft^3/s)	Harmonic Mean (ft^3/s)
0604	8033500	TYLER	1969	1989	85.6	305.1
0604	8033000	POLK	1966	1985	64.9	213.7
0604	8032500	CHEROKEE	1970	1978	67.4	162.5
0604	8032000	ANDERSON	1969	1989	58.6	128.9
0607	8041700	HARDIN	1969	1989	2.5	20.0
0608	8041500	HARDIN	1969	1989	82.0	230.0
0611	8037000	NACOGDOCHES	1960	1979	38.7	106.1
0611	8036500	CHEROKEE	1969	1989	37.7	120.4
0612	8038000	NACOGDOCHES	1965	1985	27.0	71.5
0802	8066500	LIBERTY	1969	1989	674.1	1816.3
0802	8066250	POLK	1969	1989	539.4	1583.1
0804	8065350	LEON	1969	1989	685.0	1603.0
0804	8065000	ANDERSON	1969	1989	564.3	1288.4
0804	8062700	HENDERSON	1965	1989	477.2	988.8
0805	8062500	KAUFMAN	1969	1989	456.7	929.3
0805	8057410	DALLAS	1972	1989	441.7	802.6
0805	8057055	DALLAS	1984	1988	289.9	547.7
0805	8057000	DALLAS	1969	1989	214.3	434.3
0806	8048543	TARRANT	1977	1989	9.4	26.8
0806	8048000	TARRANT	1969	1989	8.5	13.8
0810	8044500	WISE	1969	1989	5.9	19.4
0810	8043100	WISE	1985	1989	1.4	0.9
0812	8042800	JACK	1970	1989	0.1*	0.3
0814	8064100	NAVARRO	1984	1989	0.1*	1.2
0819	8062000	KAUFMAN	1969	1989	34.3	72.8
0819	8061750	KAUFMAN	1973	1989	22.4	48.5
0822	8055500	DALLAS	1969	1989	12.8	13.2

Segment	USGS Gage	County	Period of Record Start	End	7Q2 (ft^3/s)	Harmonic Mean (ft^3/s)
0822	8053000	DENTON	1969	1989	55.6	77.0
0825	8055000	DENTON	1969	1989	8.5	16.8
0829	8047500	TARRANT	1969	1989	1.1	2.0
0829	8047000	TARRANT	1970	1989	0.2	0.5
0831	8046000	PARKER	1950	1970	0.1*	2.0
0831	8045850	PARKER	1981	1985	0.4	0.4
0837	8063100	NAVARRO	1961	1989	0.1*	0.5
0841	8049500	DALLAS	1969	1989	107.4	206.3
0902	8067500	LIBERTY	1971	1989	0.3	1.1
1003	8070200	MONTGOMERY	1985	1989	28.6	60.0
1003	8070000	LIBERTY	1969	1989	18.7	37.6
1004	8068090	MONTGOMERY	1984	1989	31.9	97.9
1004	8068000	MONTGOMERY	1969	1989	20.0	52.4
1004	8067650	MONTGOMERY	1975	1989	0.1*	2.8
1008	8068520	MONTGOMERY	1976	1989	15.0	43.5
1009	8069000	HARRIS	1969	1989	10.4	23.7
1009	8068800	HARRIS	1983	1989	0.5	3.3
1009	8068740	HARRIS	1976	1989	0.1*	0.6
1009	8068720	HARRIS	1984	1989	0.1*	0.4
1010	8070500	MONTGOMERY	1969	1989	13.7	26.4
1011	8071000	MONTGOMERY	1965	1977	7.2	16.7
1014	8073700	HARRIS	1970	1989	38.6	91.9
1014	8073600	HARRIS	1972	1989	40.7	96.2
1014	8073500	HARRIS	1974	1989	18.3	45.4
1016	8076000	HARRIS	1969	1989	12.1	18.0
1016	8075900	HARRIS	1981	1989	11.6	17.4
1017	8074500	HARRIS	1974	1989	26.1	41.3

Segment	USGS Gage	County	Period of Record Start	End	7Q2 (ft^3/s)	Harmonic Mean (ft^3/s)
1102	8077000	HARRIS	1973	1989	0.5	2.1
1108	8078000	BRAZORIA	1969	1989	1.5	7.1
1110	8079000	BRAZORIA	1971	1980	81.0	99.0
1202	8116650	FORT BEND	1970	1989	607.9	1522.0
1202	8114000	FORT BEND	1969	1989	720.1	2013.1
1202	8111500	WALLER	1969	1989	665.7	1797.8
1204	8091000	SOMERVELL	1975	1989	15.6	50.0
1206	8090800	PARKER	1970	1989	32.2	93.2
1206	8089000	PALO PINTO	1969	1989	21.4	63.7
1208	8088000	YOUNG	1969	1989	9.2	4.7
1208	8082500	BAYLOR	1970	1989	0.1	1.7
1209	8111000	BRAZOS	1969	1989	3.9	14.4
1209	8110500	LEON	1969	1989	1.5	6.7
1211	8110000	BURLESON	1969	1989	0.1	0.4
1213	8106500	MILAM	1969	1989	63.7	210.2
1213	8104500	BELL	1969	1989	54.9	147.7
1214	8106310	MILAM	1981	1989	5.1	11.3
1214	8105700	WILLIAMSON	1969	1989	3.5	2.9
1215	8104100	BELL	1969	1989	3.9	10.3
1217	8103800	LAMPASAS	1969	1989	10.5	23.2
1218	8102600	BELL	1974	1982	16.3	29.2
1219	8102500	BELL	1969	1989	2.5	6.9
1221	8100500	CORYELL	1968	1989	1.8	1.9
1221	8100000	HAMILTON	1969	1989	0.1*	0.9
1221	8099500	COMANCHE	1969	1989	0.6	2.3
1223	8099100	COMANCHE	1966	1986	0.1*	0.5
1226	8095200	BOSQUE	1969	1989	5.0	8.7

Segment	USGS Gage	County	Period of Record Start	End	7Q2 (ft^3/s)	Harmonic Mean (ft^3/s)
1226	8095000	BOSQUE	1969	1989	2.6	2.8
1226	8094800	HAMILTON	1969	1989	0.3	1.3
1227	8092000	HILL	1967	1987	0.7	2.4
1232	8085500	SHACKELFORD	1969	1989	0.3	2.4
1232	8084000	JONES	1970	1989	1.7	1.4
1232	8083240	JONES	1969	1989	1.6	5.1
1232	8083100	FISHER	1969	1989	0.7	1.1
1238	8082000	STONEWALL	1969	1989	0.1	0.4
1238	8081000	STONEWALL	1970	1986	0.1*	0.6
1241	8080500	STONEWALL	1970	1989	0.1*	0.8
1242	8109000	BRAZOS	1969	1989	359.7	1118.6
1242	8098290	FALLS	1969	1989	166.6	417.2
1242	8096500	McLENNAN	1969	1989	91.0	144.7
1242	8093100	HILL	1974	1989	32.9	114.4
1248	8105300	WILLIAMSON	1977	1989	13.9	25.2
1248	8105000	WILLIAMSON	1970	1987	19.1	26.1
1248	8104700	WILLIAMSON	1969	1989	0.8	1.5
1250	8104900	WILLIAMSON	1969	1989	0.2	0.5
1253	8110325	LIMESTONE	1979	1989	0.1*	0.4
1255	8093700	ERATH	1970	1979	0.1*	0.1
1302	8117500	FORT BEND	1969	1989	13.9	63.7
1402	8162500	MATAGORDA	1969	1989	207.7	72.0
1402	8162000	WHARTON	1969	1989	358.4	1054.2
1402	8161000	COLORADO	1969	1989	271.0	1054.9
1409	8147000	SAN SABA	1969	1989	28.4	22.6
1410	8138000	BROWN	1969	1989	0.1	2.4
1410	8136700	COLEMAN	1969	1989	5.1	4.6

Segment	USGS Gage	County	Period of Record Start	End	7Q2 (ft^3/s)	Harmonic Mean (ft^3/s)
1412	8123850	COKE	1969	1989	0.1*	0.9
1412	8121000	MITCHELL	1969	1989	0.1*	0.2
1412	8120700	MITCHELL	1969	1989	0.1*	0.6
1412	8119500	SCURRY	1969	1989	0.1*	0.2
1414	8153500	BLANCO	1980	1989	2.0	3.3
1414	8152900	GILLESPIE	1980	1989	2.0	3.2
1415	8151500	LLANO	1970	1989	71.5	115.9
1415	8150700	MASON	1969	1989	83.0	120.5
1415	8150000	KIMBLE	1970	1989	81.4	124.0
1416	8146000	SAN SABA	1969	1989	19.3	25.4
1416	8144600	McCULLOCH	1980	1989	4.4	2.1
1416	8144500	MENARD	1969	1989	5.3	4.4
1417	8143600	MILLS	1969	1989	0.3	2.9
1421	8136500	CONCHO	1969	1989	1.4	1.3
1421	8136000	TOM GREEN	1969	1989	0.3	0.3
1424	8128400	IRION	1969	1989	0.1*	0.6
1424	8128000	TOM GREEN	1969	1989	9.1	13.3
1426	8126380	RUNNELS	1980	1989	0.2	0.9
1426	8124000	COKE	1969	1989	0.1*	0.1
1427	8159000	TRAVIS	1976	1989	0.6	2.4
1427	8158700	HAYS	1980	1989	0.4	1.5
1428	8158000	TRAVIS	1974	1989	63.3	252.0
1430	8155500	TRAVIS	1978	1989	35.9	49.1
1430	8155300	TRAVIS	1977	1989	0.1*	2.1
1430	8155260	TRAVIS	1983	1987	0.1*	0.9
1432	8143500	BROWN	1964	1983	0.1*	0.5
1434	8159200	BASTROP	1969	1989	191.4	748.5

Segment	USGS Gage	County	Period of Record Start	End	7Q2 (ft^3/s)	Harmonic Mean (ft^3/s)
1502	8162600	MATAGORDA	1971	1989	5.9	19.0
1602	8164000	JACKSON	1969	1989	21.6	25.3
1605	8164350	LAVACA	1983	1989	1.5	3.6
1605	8164300	LAVACA	1969	1989	3.7	4.9
1803	8176500	VICTORIA	1968	1989	641.9	943.2
1803	8175800	DE WITT	1969	1989	606.6	876.3
1806	8167500	COMAL	1969	1989	98.4	127.7
1806	8167000	KENDALL	1969	1989	57.1	95.8
1806	8166140	KERR	1979	1986	46.2	70.5
1806	8165500	KERR	1969	1989	27.1	45.6
1807	8177500	VICTORIA	1979	1989	3.4	5.3
1807	8176900	VICTORIA	1979	1989	4.0	0.8
1808	8172000	CALDWELL	1969	1989	161.3	223.4
1809	8171300	HAYS	1969	1989	14.7	7.2
1810	8173000	CALDWELL	1969	1989	2.0	7.2
1810	8172400	CALDWELL	1969	1989	0.1*	0.6
1811	8169000	COMAL	1969	1989	231.1	260.9
1812	8168500	COMAL	1969	1989	112.1	192.5
1812	8167800	COMAL	1969	1989	65.9	122.9
1813	8171000	HAYS	1969	1989	32.0	58.5
1814	8170000	HAYS	1969	1989	58.0**	157.9
1816	8166000	KERR	1969	1989	9.0	16.9
1817	8165300	KERR	1969	1989	15.4	23.0
1901	8188500	GOLIAD	1969	1989	211.2	412.5
1902	8186000	KARNES	1969	1989	12.3	15.4
1903	8181500	BEXAR	1965	1989	65.8	105.9
1903	8180800	BEXAR	1971	1989	42.0	77.0

Segment	USGS Gage	County	Period of Record Start	End	7Q2 (ft^3/s)	Harmonic Mean (ft^3/s)
1903	8180700	BEXAR	1981	1989	28.5	50.1
1905	8178880	BANDERA	1985	1989	24.0	56.8
1908	8183900	KENDALL	1969	1989	1.4	1.7
1910	8178800	BEXAR	1969	1989	10.3	18.7
1910	8178700	BEXAR	1969	1989	0.1*	0.4
1911	8183500	KARNES	1969	1989	197.3	345.3
1911	8181800	BEXAR	1969	1989	163.3	317.5
1911	8178000	BEXAR	1969	1989	10.4	18.2
1913	8185000	BEXAR	1979	1989	0.1*	1.7
2002	8189500	REFUGIO	1969	1989	5.5	2.3
2004	8189700	BEE	1969	1989	1.0	1.9
2102	8211000	SAN PATRICIO	1969	1989	84.4	147.1
2104	8194500	McMULLEN	1969	1989	0.1*	0.4
2105	8194000	LA SALLE	1969	1989	0.1*	0.8
2105	8193000	DIMMIT	1969	1989	0.1*	0.3
2106	8210000	LIVE OAK	1969	1989	11.1	14.0
2107	8208000	LIVE OAK	1969	1989	1.0	1.3
2108	8206700	McMULLEN	1969	1989	0.1*	0.3
2110	8198500	UVALDE	1969	1989	0.6	1.4
2111	8198000	UVALDE	1969	1989	8.8	9.7
2112	8192000	UVALDE	1969	1989	22.4	29.8
2112	8190000	UVALDE	1969	1989	35.2	76.6
2113	8195000	UVALDE	1969	1989	45.4	73.7
2114	8200700	MEDINA	1969	1989	0.1*	0.1
2114	8200000	MEDINA	1969	1989	2.5	2.3
2115	8202700	MEDINA	1970	1989	0.1*	3.5
2115	8201500	MEDINA	1969	1989	1.2	1.2

Segment	USGS Gage	County	Period of Record Start	End	7Q2 (ft^3/s)	Harmonic Mean (ft^3/s)
2117	8206600	McMULLEN	1979	1989	0.2	1.0
2117	8205500	FRIO	1969	1989	2.1	4.7
2117	8197500	UVALDE	1970	1989	0.1*	1.6
2311	8446500	PECOS	1970	1989	6.2	17.8
2311	8412500	REEVES	1970	1989	8.3	19.8

* Calculated 7Q2 is less than 0.1 ft^3/s.

** The critical low-flow for Segment 1814 is a 0.1% probability value derived from a Log normal distribution for a 33-year period of record (water years 1957-1989) at the USGS gage.

Appendix C - Segment Descriptions

The following descriptions define the geographic extent of the state's classified segments. Boundaries of bay and estuary segments have not been precisely defined. Segment boundaries are illustrated in the document entitled The State of Texas Water Quality Inventory, which is published by the Commission.

SEGMENT	DESCRIPTION
0101	Canadian River Below Lake Meredith - from the Oklahoma State Line in Hemphill County to Sanford Dam in Hutchinson County
0102	Lake Meredith - from Sanford Dam in Hutchinson County to a point immediately upstream of the confluence of Camp Creek in Potter County, up to the normal pool elevation of 2936.5 feet (impounds Canadian River)
0103	Canadian River Above Lake Meredith - from a point immediately upstream of the confluence of Camp Creek in Potter County to the New Mexico State Line in Oldham County
0104	Wolf Creek - from the Oklahoma State Line in Lipscomb County to a point 2.0 kilometers (1.2 miles) upstream of FM 3045 in Ochiltree County
0105	Rita Blanca Lake - from Rita Blanca Dam in Hartley County up to the normal pool elevation of 3860 feet (impounds Rita Blanca Creek)
0201	Lower Red River - from the Arkansas State Line in Bowie County to the Arkansas-Oklahoma State Line in Bowie County
0202	Red River Below Lake Texoma - from the Arkansas-Oklahoma State Line in Bowie County to Denison Dam in Grayson County
0203	Lake Texoma - from Denison Dam in Grayson County to a point immediately upstream of the confluence of Sycamore Creek in Cooke County, up to the normal pool elevation of 617 feet (impounds Red River)
0204	Red River Above Lake Texoma - from a point immediately upstream of the confluence of Sycamore Creek in Cooke County to the confluence of the Wichita River in Clay County
0205	Red River Below Pease River - from the confluence of the Wichita River in Clay County to the confluence of the Pease River in Wilbarger County

SEGMENT	DESCRIPTION
0206	Red River Above Pease River - from the confluence of the Pease River in Wilbarger County to a point immediately upstream of the confluence of Buck Creek in Hardeman County
0207	Lower Prairie Dog Town Fork Red River - from a point immediately upstream of the confluence of Buck Creek in Hardeman County to a point 100 meters (110 yards) upstream of the confluence of Salt Fork Creek in Armstrong County
0208	Lake Crook - from Lake Crook Dam in Lamar County up to the normal pool elevation of 476 feet (impounds Pine Creek)
0209	Pat Mayse Lake - from Pat Mayse Dam in Lamar County up to the normal pool elevation of 451 feet (impounds Sanders Creek)
0210	Farmers Creek Reservoir - from Farmers Creek Dam in Montague County up to the normal pool elevation of 827 feet (impounds Farmers Creek)
0211	Little Wichita River - from the confluence with the Red River in Clay County to Lake Arrowhead Dam in Clay County
0212	Lake Arrowhead - from Lake Arrowhead Dam in Clay County up to the normal pool elevation of 926 feet (impounds the Little Wichita River)
0213	Lake Kickapoo - from Kickapoo Dam in Archer County up to the normal pool elevation of 1045 feet (impounds North Fork Little Wichita River)
0214	Wichita River Below Diversion Lake - from the confluence with the Red River in Clay County to Diversion Dam in Archer County
0215	Diversion Lake - from Diversion Dam in Archer County to a point 1.5 kilometers (0.9 miles) downstream of the confluence of Cottonwood Creek in Baylor County, up to the normal pool elevation of 1051 feet (impounds Wichita River)
0216	Wichita River Below Lake Kemp - from a point 1.5 kilometers (0.9 miles) downstream of the confluence of Cottonwood Creek in Baylor County to Lake Kemp Dam in Baylor County
0217	Lake Kemp - from Lake Kemp Dam in Baylor County to a point 9.4 kilometers (5.8 miles) downstream of the confluence of Crooked Creek in Baylor County, up to the normal pool elevation of 1144 feet (impounds Wichita River)

SEGMENT	DESCRIPTION
0218	Wichita/North Fork Wichita River - from a point 9.4 kilometers (5.8 miles) downstream of the confluence of Crooked Creek in Baylor County to a point 8.5 kilometers (5.3 miles) downstream of the most upstream crossing of FM 193 in Dickens County
0219	Lake Wichita - from Lake Wichita Dam in Wichita County up to the normal pool elevation of 980.5 feet (impounds Holliday Creek)
0220	Pease/North Fork Pease River - from the confluence with the Red River in Wilbarger County to 6.0 kilometers (3.7 miles) upstream of the confluence of Dick Moore Canyon in Floyd County
0221	Middle Fork Pease River - from the confluence with the North Fork Pease River in Cottle County to the confluence of Boggy Creek and Mott Creek in Motley County
0222	Salt Fork Red River - from the Oklahoma State Line in Collingsworth County to Greenbelt Dam in Donley County
0223	Greenbelt Lake - from Greenbelt Dam in Donley County up to the normal pool elevation of 2664 feet (impounds Salt Fork Red River)
0224	North Fork Red River - from the Oklahoma State Line in Wheeler County to a point 4.0 kilometers (2.5 miles) upstream of FM 2300 in Gray County
0225	McKinney Bayou - from the Arkansas State Line in Bowie County to a point 100 meters (110 yards) upstream of the most upstream crossing of FM 1397 near King Lake in Bowie County
0226	South Fork Wichita River - from the confluence with the North Fork Wichita River in Knox County to a point 15.0 kilometers (9.3 miles) upstream of US 82 in Dickens County
0227	South Fork Pease River - from the confluence with the Middle Fork Pease River in Cottle County to the confluence of Wolf Creek and Rustler Creek in Motley County
0228	Mackenzie Reservoir - from Mackenzie Dam in Briscoe County up to the normal pool elevation of 3100 feet (impounds Tule Creek)
0229	Upper Prairie Dog Town Fork Red River - from a point 100 meters (110 yards) upstream of the confluence of Salt Fork Creek in Armstrong County to Lake Tanglewood Dam in Randall County

SEGMENT	DESCRIPTION
0301	Sulphur River Below Wright Patman Lake - from the Arkansas State Line in Bowie/Cass County to Wright Patman Lake Dam in Bowie/Cass County
0302	Wright Patman Lake - from Wright Patman Lake Dam in Bowie/Cass County to a point 1.5 kilometers (0.9 mile) downstream of Bassett Creek in Bowie/Cass County, up to the normal pool elevation of 225 feet (impounds the Sulphur River)
0303	Sulphur/South Sulphur River - from a point 1.5 kilometers (0.9 miles) downstream of Bassett Creek in Bowie/Cass County to Cooper Lake dam in Delta/Hopkins County
0304	Days Creek - from the Arkansas State Line in Bowie County to the confluence of Swampoodle Creek and Nix Creek in Bowie County
0305	North Sulphur River - from the confluence with the South Sulphur River in Lamar County to a point 6.7 kilometers (4.2 miles) upstream of FM 68 in Fannin County
0306	Upper South Sulphur River - from a point 1.0 kilometers (0.7 miles) upstream of SH 71 in Delta/Hopkins County to SH 78 in Fannin County
0307	Cooper Lake - from Cooper Lake dam in Delta/Hopkins County to a point 1.0 kilometers (0.7 miles) upstream of SH 71 on the South Sulphur River arm in Delta/Hopkins County and 300 meters (275 yards) below the confluence of Barnett Creek on the Middle Sulphur River arm in Delta County, up to a conservation pool elevation of 440 feet (impounds the Middle Sulphur/South Sulphur River)
0401	Caddo Lake - from the Louisiana State Line in Harrison/Marion County to a point 12.3 kilometers (7.6 miles) downstream of SH 43 in Harrison/Marion County, up to the normal pool elevation of 168.5 feet (impounds Big Cypress Creek)
0402	Big Cypress Creek Below Lake O' the Pines - from a point 12.3 kilometers (7.6 miles) downstream of SH 43 in Harrison/Marion County to Ferrell's Bridge Dam in Marion County
0403	Lake O' the Pines - from Ferrell's Bridge Dam in Marion County to a point 1.0 kilometer (0.6 mile) downstream of US 259 in Morris/Upshur County, up to the normal pool elevation of 228.5 feet (impounds Big Cypress Creek)
0404	Big Cypress Creek Below Lake Bob Sandlin - from a point 1.0 kilometer (0.6 mile) downstream of US 259 in Morris/Upshur County to Fort Sherman Dam in Camp/Titus County

SEGMENT	DESCRIPTION
0405	Lake Cypress Springs - from Franklin County Dam in Franklin County up to the normal pool elevation of 378 feet (impounds Big Cypress Creek)
0406	Black Bayou - from the Louisiana State Line in Cass County to FM 96 in Cass County
0407	James' Bayou - from the Louisiana State Line in Marion County to Club Lake Road northwest of Linden in Cass County
0408	Lake Bob Sandlin - from Fort Sherman Dam in Camp/Titus County to Franklin County Dam in Franklin County, up to the normal pool elevation of 337.5 feet (impounds Big Cypress Creek)
0409	Little Cypress Bayou (Creek) - from the confluence with Big Cypress Creek in Harrison County to a point 1.0 kilometer (0.6 mile) upstream of FM 2088 in Wood County
0501	Sabine River Tidal - from the confluence with Sabine Lake in Orange County to Morgan Bluff in Orange County
0503	Sabine River Below Toledo Bend Reservoir - from Morgan Bluff in Orange County to Toledo Bend Dam in Newton County
0504	Toledo Bend Reservoir - from Toledo Bend Dam in Newton County to a point immediately upstream of the confluence of Murvaul Creek in Panola County, up to the normal pool elevation of 172 feet (impounds Sabine River)
0505	Sabine River Above Toledo Bend Reservoir - from a point immediately upstream of the confluence of Murvaul Creek in Panola County to a point 100 meters (110 yards) downstream of US 271 in Gregg County
0506	Sabine River Below Lake Tawakoni - from a point 100 meters (110 yards) downstream of US 271 in Gregg County to Iron Bridge Dam in Rains County
0507	Lake Tawakoni - from Iron Bridge Dam in Rains County up to the normal pool elevation of 437.5 feet (impounds Sabine River)
0508	Adams Bayou Tidal - from the confluence with the Sabine River in Orange County to a point 1.1 kilometers (0.7 mile) upstream of IH 10 in Orange County
0509	Murvaul Lake - from Murvaul Dam in Panola County up to the normal pool elevation of 265.3 feet (impounds Murvaul Bayou)

SEGMENT	DESCRIPTION
0510	Lake Cherokee - from Cherokee Dam in Gregg/Rusk County up to the normal pool elevation of 280 feet (impounds Cherokee Bayou)
0511	Cow Bayou Tidal - from the confluence with the Sabine River in Orange County to a point 4.8 kilometers (3.0 miles) upstream of IH 10 in Orange County
0512	Lake Fork Reservoir - from Lake Fork Dam in Wood County up to the normal pool elevation of 403 feet (impounds Lake Fork Creek)
0513	Big Cow Creek - from the confluence with the Sabine River in Newton County to a point 4.6 kilometers (2.9 miles) upstream of R 255 in Newton County
0514	Big Sandy Creek - from the confluence with the Sabine River in Upshur County to a point 2.6 kilometers (1.6 miles) upstream of SH 11 in Hopkins County
0515	Lake Fork Creek - from the confluence with the Sabine River in Wood County to Lake Fork Dam in Wood County
0601	Neches River Tidal - from the confluence with Sabine Lake in Orange County to a point 11.3 kilometers (7.0 miles) upstream of IH 10 in Orange County
0602	Neches River Below B. A. Steinhagen Lake - from a point 11.3 kilometers (7.0 miles) upstream of IH 10 in Orange County to Town Bluff Dam in Jasper/Tyler County
0603	B. A. Steinhagen Lake - from Town Bluff Dam in Jasper/Tyler County to a point immediately upstream of the confluence of Hopson Mill Creek on the Neches River Arm in Jasper/Tyler County and to a point immediately upstream of the confluence of Indian Creek on the Angelina River Arm in Jasper County, up to the normal pool elevation of 83 feet (impounds Neches River)
0604	Neches River Below Lake Palestine - from a point immediately upstream of the confluence of Hopson Mill Creek in Jasper/Tyler County to Blackburn Crossing Dam in Anderson/Cherokee County
0605	Lake Palestine - from Blackburn Crossing Dam in Anderson/Cherokee County to a point 6.7 kilometers (4.2 miles) downstream of FM 279 in Henderson/Smith County, up to the normal pool elevation of 345 feet (impounds Neches River)
0606	Neches River Above Lake Palestine - from a point 6.7 kilometers (4.2 miles) downstream of FM 279 in Henderson/Smith County to Rhines Lake Dam in Van Zandt County

SEGMENT	DESCRIPTION

0607 Pine Island Bayou - from the confluence with the Neches River in Hardin/Jefferson County to FM 787 in Hardin County

0608 Village Creek - from the confluence with the Neches River in Hardin County to Lake Kimble Dam in Hardin County

0609 Angelina River Below Sam Rayburn Reservoir - from a point immediately upstream of the confluence of Indian Creek in Jasper County to Sam Rayburn Dam in Jasper County

0610 Sam Rayburn Reservoir - from Sam Rayburn Dam in Jasper County to the aqueduct crossing 1.0 kilometer (0.6 mile) upstream of the confluence of Paper Mill Creek on the Angelina River Arm in Angelina/Nacogdoches County and to a point 3.9 kilometers (2.4 miles) downstream of Curry Creek on the Attoyac Bayou Arm in Nacogdoches/San Augustine County, up to the normal pool elevation of 164 feet (impounds Angelina River)

0611 Angelina River Above Sam Rayburn Reservoir - from the aqueduct crossing 1.0 kilometer (0.6 mile) upstream of the confluence of Paper Mill Creek in Angelina/Nacogdoches County to the confluence of Barnhardt Creek and Mill Creek at FM 225 in Rusk County

0612 Attoyac Bayou - from a point 3.9 kilometers (2.4 miles) downstream of Curry Creek in Nacogdoches/San Augustine County to FM 95 in Rusk County

0613 Lake Tyler/Lake Tyler East - from Whitehouse Dam and Mud Creek Dam in Smith County up to the normal pool elevation of 375.38 feet (impounds Prairie Creek and Mud Creek)

0614 Lake Jacksonville - from Buckner Dam in Cherokee County up to the normal pool elevation of 422 feet (impounds Gum Creek)

0701 Taylor Bayou Above Tidal - from the salt water lock 7.7 kilometers (4.8 miles) downstream of SH 73 in Jefferson County to the Lower Neches Valley Authority Canal in Jefferson County

0702 Intracoastal Waterway Tidal - from the confluence with Galveston Bay at Port Bolivar in Galveston County to the confluence with the Sabine-Neches/Port Arthur Canal in Jefferson County (including Taylor Bayou Tidal from the confluence with the Intracoastal Waterway up to the salt water lock 7.7 kilometers (4.8 miles) downstream of SH 73 in Jefferson County)

SEGMENT	DESCRIPTION
0703	Sabine-Neches Canal Tidal - from the confluence with Sabine Pass at the southern tip of Pleasure Island in Jefferson County to the Sabine Lake seawall at the northern tip of Pleasure Island in Jefferson County
0704	Hillebrandt Bayou - from the confluence of Taylor Bayou in Jefferson County to a point 100 meters (110 yards) upstream of SH 124 in Jefferson County
0801	Trinity River Tidal - from the confluence with Anahuac Channel in Chambers County to a point 3.1 kilometers (1.9 miles) downstream of US 90 in Liberty County
0802	Trinity River Below Lake Livingston - from a point 3.1 kilometers (1.9 miles) downstream of US 90 in Liberty County to Livingston Dam in Polk/San Jacinto County
0803	Lake Livingston - from Livingston Dam in Polk/San Jacinto County to a point 1.8 kilometers (1.1 miles) upstream of Boggy Creek in Houston/Leon County, up to the normal pool elevation of 131 feet (impounds Trinity River)
0804	Trinity River Above Lake Livingston - from a point 1.8 kilometers (1.1 miles) upstream of Boggy Creek in Houston/Leon County to a point immediately upstream of the confluence of the Cedar Creek Reservoir discharge canal in Henderson/Navarro County
0805	Upper Trinity River - from a point immediately upstream of the confluence of the Cedar Creek Reservoir discharge canal in Henderson/Navarro County to a point immediately upstream of the confluence of Elm Fork Trinity River in Dallas County
0806	West Fork Trinity River Below Lake Worth - from a point immediately upstream of the confluence of Village Creek in Tarrant County to Lake Worth Dam in Tarrant County
0807	Lake Worth - from Lake Worth Dam in Tarrant County to a point 4.0 kilometers (2.5 miles) downstream of Eagle Mountain Dam in Tarrant County, up to the normal pool elevation of 594.3 feet (impounds West Fork Trinity River)
0808	West Fork Trinity River Below Eagle Mountain Reservoir - from a point 4.0 kilometers (2.5 miles) downstream of Eagle Mountain Dam in Tarrant County to Eagle Mountain Dam in Tarrant County
0809	Eagle Mountain Reservoir - from Eagle Mountain Dam in Tarrant County to a point 0.6 kilometer (0.4 mile) downstream of the confluence of Oates Branch in Wise County up to the normal pool elevation of 649.1 feet (impounds West Fork Trinity River)

SEGMENT	DESCRIPTION
0810	West Fork Trinity River Below Bridgeport Reservoir - from a point 0.6 kilometer (0.4 mile) downstream of the confluence of Oates Branch in Wise County to Bridgeport Dam in Wise County
0811	Bridgeport Reservoir - from Bridgeport Dam in Wise County to a point immediately upstream of the confluence of Bear Hollow in Jack County, up to the normal pool elevation of 836 feet (impounds West Fork Trinity River)
0812	West Fork Trinity River Above Bridgeport Reservoir - from a point immediately upstream of the confluence of Bear Hollow in Jack County to SH 79 in Archer County
0813	Houston County Lake - from Houston County Dam in Houston County up to the normal pool elevation of 260 feet (impounds Little Elkhart Creek)
0814	Chambers Creek Above Richland-Chambers Reservoir - from a point 4.0 kilometers (2.5 miles) downstream of Tupelo Branch in Navarro County to the confluence of North Fork Chambers Creek and South Fork Chambers Creek
0815	Bardwell Reservoir - from Bardwell Dam in Ellis County up to the normal pool elevation of 421 feet (impounds Waxahachie Creek)
0816	Lake Waxahachie - from South Prong Dam in Ellis County up to the normal pool elevation of 531.5 feet (impounds South Prong Creek)
0817	Navarro Mills Lake - from Navarro Mills Dam in Navarro County up to the normal pool elevation of 424.5 feet (impounds Richland Creek)
0818	Cedar Creek Reservoir - from Joe B. Hoggsett Dam in Henderson County up to the normal pool elevation of 322 feet (impounds Cedar Creek)
0819	East Fork Trinity River - from the confluence with the Trinity River in Kaufman County to Rockwall-Forney Dam in Kaufman County
0820	Lake Ray Hubbard - from Rockwall-Forney Dam in Kaufman County to Lavon Dam in Collin County, up to the normal pool elevation of 435.5 feet (impounds East Fork Trinity River)
0821	Lavon Lake - from Lavon Dam in Collin County up to the normal pool elevation of 492 feet (impounds East Fork Trinity River)
0822	Elm Fork Trinity River Below Lewisville Lake - from the confluence with the West Fork Trinity River in Dallas County to Lewisville Dam in Denton County

SEGMENT	DESCRIPTION
0823	Lewisville Lake - from Lewisville Dam in Denton County to a point 100 meters (110 yards) upstream of US 380 in Denton County, up to the normal pool elevation of 515 feet (impounds Elm Fork Trinity River)
0824	Elm Fork Trinity River Above Ray Roberts Lake - from a point 9.5 kilometers (5.9 miles) downstream of the confluence of Pecan Creek in Cooke County to US 82 in Montague County
0825	Denton Creek - from the confluence with the Elm Fork Trinity River in Dallas County to Grapevine Dam in Tarrant County
0826	Grapevine Lake - from Grapevine Dam in Tarrant County up to the normal pool elevation of 535 feet (impounds Denton Creek)
0827	White Rock Lake - from White Rock Dam in Dallas County up to the normal pool elevation of 458 feet (impounds White Rock Creek)
0828	Lake Arlington - from Arlington Dam in Tarrant County up to the normal pool elevation of 550 feet (impounds Village Creek)
0829	Clear Fork Trinity River Below Benbrook Lake - from the confluence with the West Fork Trinity River in Tarrant County to Benbrook Dam in Tarrant County
0830	Benbrook Lake - from Benbrook Dam in Tarrant County to a point 200 meters (220 yards) downstream of US 377 in Tarrant County, up to the normal pool elevation of 694 feet (impounds Clear Fork Trinity River)
0831	Clear Fork Trinity River Below Lake Weatherford - from a point 200 meters (220 yards) downstream of US 377 in Tarrant County to Weatherford Dam in Parker County
0832	Lake Weatherford - from Weatherford Dam in Parker County to a point 3.1 kilometers (1.9 miles) upstream of FM 1707 in Parker County, up to the normal pool elevation of 896 feet (impounds Clear Fork Trinity River)
0833	Clear Fork Trinity River Above Lake Weatherford - from a point 3.1 kilometers (1.9 miles) upstream of FM 1707 in Parker County to FM 3107 in Parker County
0834	Lake Amon G. Carter - from Amon G. Carter Dam in Montague County up to the normal pool elevation of 920 feet (impounds Big Sandy Creek)
0835	Richland Creek Below Richland-Chambers Reservoir - from the confluence with the Trinity River in Freestone County to Richland-Chambers Dam in Freestone County

SEGMENT	DESCRIPTION
0836	Richland-Chambers Reservoir - from Richland-Chambers Dam in Freestone County to the confluence of Pin Oak Creek on the Richland Creek Arm in Navarro County and to a point 4.0 kilometers (2.5 miles) downstream of Tupelo Branch on the Chambers Creek Arm in Navarro County, up to the normal pool elevation of 315 feet (impounds Richland and Chambers Creeks)
0837	Richland Creek Above Richland-Chambers Reservoir - from the confluence of Pin Oak Creek in Navarro County to Navarro Mills Dam in Navarro County
0838	Joe Pool Lake - from Joe Pool Dam in Dallas County up to the normal pool elevation of 522 feet (impounds Mountain Creek)
0839	Elm Fork Trinity River Below Ray Roberts Lake - from a point 100 meters (110 yards) upstream of US 380 in Denton County to Ray Roberts Dam in Denton County
0840	Ray Roberts Lake - from Ray Roberts Dam in Denton County to a point 9.5 kilometers (5.9 miles) downstream of the confluence of Pecan Creek in Cooke County, up to the normal pool elevation of 632.5 feet (impounds Elm Fork Trinity River)
0841	Lower West Fork Trinity River - from a point immediately upstream of the confluence of the Elm Fork Trinity River in Dallas County to a point immediately upstream of the confluence of Village Creek in Tarrant County
0901	Cedar Bayou Tidal - from the confluence with Galveston Bay 1.0 kilometer (0.6 mile) downstream of Tri-City Beach Road in Chambers County to a point 2.2 kilometers (1.4 miles) upstream of IH 10 in Chambers/Harris County
0902	Cedar Bayou Above Tidal - from a point 2.2 kilometers (1.4 miles) upstream of IH 10 in Chambers/Harris County to a point 7.4 kilometers (4.6 miles) upstream of FM 1960 in Liberty County
1001	San Jacinto River Tidal - from a point 100 meters (110 yards) downstream of IH 10 in Harris County to Lake Houston Dam in Harris County
1002	Lake Houston - from Lake Houston Dam in Harris County to the confluence of Spring Creek on the West Fork San Jacinto Arm in Harris/Montgomery County and to the confluence of Caney Creek on the East Fork San Jacinto Arm in Harris County, up to the normal pool elevation of 44.5 feet (impounds San Jacinto River)
1003	East Fork San Jacinto River - from the confluence of Caney Creek in Harris County to US 190 in Walker County

SEGMENT	DESCRIPTION
1004	West Fork San Jacinto River - from the confluence of Spring Creek in Harris/Montgomery County to Conroe Dam in Montgomery County
1005	Houston Ship Channel/San Jacinto River Tidal - from the confluence with Galveston Bay at Morgan's Point in Harris/Chambers County to a point 100 meters (110 yards) downstream of IH 10 in Harris County
1006	Houston Ship Channel Tidal - from the confluence with the San Jacinto River in Harris County to a point immediately upstream of Greens Bayou in Harris County, including tidal portions of tributaries
1007	Houston Ship Channel/Buffalo Bayou Tidal - from a point immediately upstream of Greens Bayou in Harris County to a point 100 meters (110 yards) upstream of US 59 in Harris County, including tidal portions of tributaries
1008	Spring Creek - from the confluence with the West Fork San Jacinto River in Harris/Montgomery County to the most upstream crossing of FM 1736 in Waller County
1009	Cypress Creek - from the confluence with Spring Creek in Harris County to the confluence of Snake Creek and Mound Creek in Waller County
1010	Caney Creek - from the confluence with the East Fork San Jacinto River in Harris County to SH 150 in Walker County
1011	Peach Creek - from the confluence with Caney Creek in Montgomery County to SH 150 in Walker County
1012	Lake Conroe - from Conroe Dam in Montgomery County up to the normal pool elevation of 201 feet (impounds West Fork San Jacinto River)
1013	Buffalo Bayou Tidal - from a point 100 meters (110 yards) upstream of US 59 in Harris County to a point 400 meters (440 yards) upstream of Shepherd Drive in Harris County
1014	Buffalo Bayou Above Tidal - from a point 400 meters (440 yards) upstream of Shepherd Drive in Harris County to SH 6 in Harris County
1015	Lake Creek - from the confluence with the West Fork San Jacinto River in Montgomery County to a point 4.0 kilometers (2.5 miles) upstream of SH 30 in Grimes County

SEGMENT	DESCRIPTION

1016 Greens Bayou Above Tidal - from a point 0.7 km (0.4 mile) upstream of the confluence of Halls Bayou in Harris County, to a point 100 meters (110 yards) upstream of FM 1960 in Harris County

1017 Whiteoak Bayou Above Tidal - from a point immediately upstream of the confluence of Little Whiteoak Bayou in Harris County to a point 3.0 km (1.9 miles) upstream of FM 1960 in Harris County

1101 Clear Creek Tidal - from the confluence with Clear Lake at a point 3.2 kilometers (2.0 miles) downstream of El Camino Real in Galveston/Harris County to a point 100 meters (110 yards) upstream of FM 528 in Galveston/Harris County

1102 Clear Creek Above Tidal - from a point 100 meters (110 yards) upstream of FM 528 in Galveston/Harris County to Rouen Road in Fort Bend County

1103 Dickinson Bayou Tidal - from the confluence with Dickinson Bay 2.1 kilometers (1.3 miles) downstream of SH 146 in Galveston County to a point 4.0 kilometers (2.5 miles) downstream of FM 517 in Galveston County

1104 Dickinson Bayou Above Tidal - from a point 4.0 kilometers (2.5 miles) downstream of FM 517 in Galveston County to FM 528 in Galveston County

1105 Bastrop Bayou Tidal - from the confluence with Bastrop Bay 1.1 kilometers (0.7 mile) downstream of the Intracoastal Waterway in Brazoria County to Old Clute Road at Lake Jackson in Brazoria County

1107 Chocolate Bayou Tidal - from the confluence with Chocolate Bay 1.4 kilometers (0.9 mile) downstream of FM 2004 in Brazoria County to a point 4.2 kilometers (2.6 miles) downstream of SH 35 in Brazoria County

1108 Chocolate Bayou Above Tidal - from a point 4.2 kilometers (2.6 miles) downstream of SH 35 in Brazoria County to SH 6 in Brazoria County

1109 Oyster Creek Tidal - from the confluence with the Intracoastal Waterway in Brazoria County to a point 100 meters (110 yards) upstream of FM 2004 in Brazoria County

1110 Oyster Creek Above Tidal - from a point 100 meters (110 yards) upstream of FM 2004 in Brazoria County to the Brazos River Authority diversion dam 1.8 kilometers (1.1 miles) upstream of SH 6 in Fort Bend County

1111 Old Brazos River Channel Tidal - from the confluence with the Intracoastal Waterway in Brazoria County to SH 288 in Brazoria County

SEGMENT	DESCRIPTION
1113	Armand Bayou Tidal - from the confluence with Clear Lake (at the NASA Road 1 bridge) in Harris County to a point 0.8 kilometer (0.5 mile) downstream of Genoa-Red Bluff Road in Pasadena in Harris County (includes Mud Lake)
1201	Brazos River Tidal - from the confluence with the Gulf of Mexico in Brazoria County to a point 100 meters (110 yards) upstream of SH 332 in Brazoria County
1202	Brazos River Below Navasota River - from a point 100 meters (110 yards) upstream of SH 332 in Brazoria County to the confluence of the Navasota River in Grimes County
1203	Whitney Lake - from Whitney Dam in Bosque/Hill County to a point immediately upstream of the confluence of Camp Creek on the Brazos River Arm in Bosque/Johnson County and to a point immediately upstream of the confluence of Rock Creek on the Nolan River Arm in Hill County, up to the normal pool elevation of 533 feet (impounds Brazos River)
1204	Brazos River Below Lake Granbury - from a point immediately upstream of the confluence of Camp Creek in Bosque/Johnson County to DeCordova Bend Dam in Hood County
1205	Lake Granbury - from DeCordova Bend Dam in Hood County to a point 100 meters (110 yards) upstream of FM 2580 in Parker County, up to the normal pool elevation of 693 feet (impounds Brazos River)
1206	Brazos River Below Possum Kingdom Lake - from a point 100 meters (110 yards) upstream of FM 2580 in Parker County to Morris Sheppard Dam in Palo Pinto County
1207	Possum Kingdom Lake - from Morris Sheppard Dam in Palo Pinto County to a point immediately upstream of the confluence of Cove Creek at Salem Bend in Young County, up to the normal pool elevation of 1000 feet (impounds Brazos River)
1208	Brazos River Above Possum Kingdom Lake - from a point immediately upstream of the confluence of Cove Creek at Salem Bend in Young County to the confluence of the Double Mountain Fork Brazos River and the Salt Fork Brazos River in Stonewall County
1209	Navasota River Below Lake Limestone - from the confluence with the Brazos River in Grimes County to Sterling C. Robertson Dam in Leon/Robertson County
1210	Lake Mexia - from Bistone Dam in Limestone County up to the normal pool elevation of 448.3 feet (impounds Navasota River)

SEGMENT	DESCRIPTION
1211	Yegua Creek - from the confluence with the Brazos River in Burleson/Washington County to Somerville Dam in Burleson/Washington County
1212	Somerville Lake - from Somerville Dam in Burleson/Washington County up to the normal pool elevation of 238 feet (impounds Yegua Creek)
1213	Little River - from the confluence with the Brazos River in Milam County to the confluence of the Leon River and the Lampasas River in Bell County
1214	San Gabriel River - from the confluence with the Little River in Milam County to Granger Lake Dam in Williamson County
1215	Lampasas River Below Stillhouse Hollow Lake - from the confluence with the Leon River in Bell County to Stillhouse Hollow Dam in Bell County
1216	Stillhouse Hollow Lake - from Stillhouse Hollow Dam in Bell County to a point immediately upstream of the confluence of Rock Creek in Bell County, up to the normal pool elevation of 622 feet (impounds Lampasas River)
1217	Lampasas River Above Stillhouse Hollow Lake - from a point immediately upstream of the confluence of Rock Creek in Bell County to FM 2005 in Hamilton County
1218	Nolan Creek/South Nolan Creek - from the confluence with the Leon River in Bell County to a point 100 meters (110 yards) upstream of the most upstream crossing of US 190 near the intersection of US 190 and Loop 172 in Bell County
1219	Leon River Below Belton Lake - from the confluence with the Lampasas River in Bell County to Belton Dam in Bell County
1220	Belton Lake - from Belton Dam in Bell County to a point 100 meters (110 yards) upstream of FM 236 in Coryell County, up to the normal pool elevation of 594 feet (impounds Leon River)
1221	Leon River Below Proctor Lake - from a point 100 meters (110 yards) upstream of FM 236 in Coryell County to Proctor Dam in Comanche County
1222	Proctor Lake - from Proctor Dam in Comanche County to a point immediately upstream of the confluence of Mill Branch in Comanche County, up to the normal pool elevation of 1162 feet (impounds Leon River)
1223	Leon River Below Leon Reservoir - from a point immediately upstream of the confluence of Mill Branch in Comanche County to Leon Dam in Eastland County

SEGMENT	DESCRIPTION
1224	Leon Reservoir - from Leon Dam in Eastland County up to the normal pool elevation of 1375 feet (impounds Leon River)
1225	Waco Lake - from Waco Lake Dam in McLennan County to a point 100 meters (110 yards) upstream of FM 185 on the North Bosque River Arm in McLennan County and to the confluence of the Middle Bosque River on the South Bosque River Arm in McLennan County, up to the normal pool elevation of 455 feet (impounds the Bosque River)
1226	North Bosque River - from a point 100 meters (110 yards) upstream of FM 185 in McLennan County to a point immediately upstream of the confluence of Indian Creek in Erath County
1227	Nolan River - from a point immediately upstream of the confluence of Rock Creek in Hill County to Cleburne Dam in Johnson County
1228	Lake Pat Cleburne - from Cleburne Dam in Johnson County up to the normal pool elevation of 733.5 feet (impounds Nolan River)
1229	Paluxy River/North Paluxy River - from the confluence with the Brazos River in Somervell County to the confluence of Rough Creek in Erath County
1230	Lake Palo Pinto - from Palo Pinto Creek Dam in Palo Pinto County up to the normal pool elevation of 867 feet (impounds Palo Pinto Creek)
1231	Lake Graham - from Graham Dam and Eddleman Dam in Young County up to the normal pool elevation of 1076.3 feet (impounds Salt Creek and Flint Creek)
1232	Clear Fork Brazos River - from the confluence with the Brazos River in Young County to the most upstream crossing of US 180 in Fisher County
1233	Hubbard Creek Reservoir - from Hubbard Creek Dam in Stephens County up to the normal pool elevation of 1183 feet (impounds Hubbard Creek)
1234	Lake Cisco - from Williamson Dam in Eastland County up to the normal pool elevation of 1496 feet (impounds Sandy Creek)
1235	Lake Stamford - from Stamford Dam in Haskell County up to the normal pool elevation of 1416.8 feet (impounds Paint Creek)
1236	Fort Phantom Hill Reservoir - from Fort Phantom Hill Dam in Jones County up to the normal pool elevation of 1636 feet (impounds Elm Creek)

SEGMENT	DESCRIPTION
1237	Lake Sweetwater - from Sweetwater Dam in Nolan County up to the normal pool elevation of 2116.5 feet (impounds Bitter Creek)
1238	Salt Fork Brazos River - from the confluence of the Double Mountain Fork Brazos River in Stonewall County to the most upstream crossing of SH 207 in Crosby County
1239	White River - from the confluence with the Salt Fork Brazos River in Kent County to White River Dam in Crosby County
1240	White River Lake - from White River Dam in Crosby County up to the normal pool elevation of 2369 feet (impounds White River)
1241	Double Mountain Fork Brazos River - from the confluence with the Salt Fork Brazos River in Stonewall County to the confluence of the North Fork Double Mountain Fork Brazos River in Kent County
1242	Brazos River Below Whitney Lake - from the confluence of the Navasota River in Brazos/Grimes/Washington County to Whitney Dam in Bosque/Hill County
1243	Salado Creek - from the confluence with the Lampasas River in Bell County to the confluence of North Salado Creek and South Salado Creek in Williamson County
1244	Brushy Creek - from the confluence with the San Gabriel River in Milam County to the confluence of South Brushy Creek in Williamson County
1245	Upper Oyster Creek - from Steep Bank Creek/Brazos River confluence in Fort Bend County to pumping station on Jones Creek at Brazos River in Fort Bend County (includes portions of Steep Bank Creek, Flat Bank Creek, and Jones Creek)
1246	Middle Bosque/South Bosque River - from the confluence with the South Bosque River in McLennan County to the confluence of Cave Creek and Middle Bosque Creek on the Middle Bosque River in Coryell County and from the confluence of the Middle Bosque River in McLennan County to FM 2671 on the South Bosque River in McLennan County
1247	Granger Lake - from Granger Dam in Williamson County to a point 1.9 kilometers (1.2 miles) downstream of SH 95 in Williamson County, up to the normal pool elevation of 504 feet (impounds San Gabriel River)
1248	San Gabriel/North Fork San Gabriel River - from a point 1.9 kilometers (1.2 miles) downstream of SH 95 in Williamson County to North San Gabriel Dam in Williamson County

SEGMENT	DESCRIPTION
1249	Lake Georgetown - from North San Gabriel Dam in Williamson County to a point 6.6 kilometers (4.1 miles) downstream of US 183 in Williamson County, up to the normal pool elevation of 791 feet (impounds North Fork San Gabriel River)
1250	South Fork San Gabriel River - from the confluence with the North Fork San Gabriel River in Williamson County to the most upstream crossing of SH 29 in Burnet County
1251	North Fork San Gabriel River - from a point 6.6 kilometers (4.1 miles) downstream of US 183 in Williamson County to the confluence of Allen Branch in Burnet County
1252	Lake Limestone - from Sterling C. Robertson Dam in Leon/Robertson County to a point 2.3 kilometers (1.4 miles) downstream of SH 164 in Limestone County, up to the normal pool elevation of 363 feet (impounds Navasota River)
1253	Navasota River Below Lake Mexia - from a point 2.3 kilometers (1.4 miles) downstream of SH 164 in Limestone County to Bistone Dam in Limestone County
1254	Aquilla Reservoir - from Aquilla Dam in Hill County up to the normal pool elevation of 537.5 feet (impounds Aquilla Creek)
1255	Upper North Bosque River - from a point immediately upstream of the confluence of Indian Creek in Erath County to the confluence of the North Fork and South Fork of the North Bosque River in Erath County
1301	San Bernard River Tidal - from the confluence with the Intracoastal Waterway in Brazoria County to a point 3.2 kilometers (2.0 miles) upstream of SH 35 in Brazoria County
1302	San Bernard River Above Tidal - from a point 3.2 kilometers (2.0 miles) upstream of SH 35 in Brazoria County to the county road southeast of New Ulm in Austin County
1304	Caney Creek Tidal - from the confluence with the Intracoastal Waterway in Matagorda County to a point 1.9 kilometers (1.2 miles) upstream of the confluence of Linnville Bayou in Matagorda County
1305	Caney Creek Above Tidal - from a point 1.9 kilometers (1.2 miles) upstream of the confluence of Linnville Bayou in Matagorda County to Old Caney Road in Wharton County
1401	Colorado River Tidal - from the confluence with the Gulf of Mexico in Matagorda County to a point 2.1 kilometers (1.3 miles) downstream of the Missouri-Pacific Railroad in Matagorda County

SEGMENT	DESCRIPTION
1402	Colorado River Below La Grange - from a point 2.1 kilometers (1.3 miles) downstream of the Missouri-Pacific Railroad in Matagorda County to a point 100 meters (110 yards) downstream of SH 71 at La Grange in Fayette County
1403	Lake Austin - from Tom Miller Dam in Travis County to Mansfield Dam in Travis County, up to the normal pool elevation of 492.8 feet (impounds Colorado River)
1404	Lake Travis - from Mansfield Dam in Travis County to Max Starcke Dam on the Colorado River Arm in Burnet County and to a point immediately upstream of the confluence of Fall Creek on the Pedernales River Arm in Travis County, up to the normal pool elevation of 681 feet (impounds Colorado River)
1405	Marble Falls Lake - from Max Starcke Dam in Burnet County to Alvin Wirtz Dam in Burnet County, up to the normal pool elevation of 738 feet (impounds Colorado River)
1406	Lake Lyndon B. Johnson - from Alvin Wirtz Dam in Burnet County to Roy Inks Dam on the Colorado River Arm in Burnet/Llano County and to a point immediately upstream of the confluence of Honey Creek on the Llano River Arm in Llano County, up to the normal pool elevation of 825 feet (impounds Colorado River)
1407	Inks Lake - from Roy Inks Dam in Burnet/Llano County to Buchanan Dam in Burnet/Llano County, up to the normal pool elevation of 888 feet (impounds Colorado River)
1408	Lake Buchanan - from Buchanan Dam in Burnet/Llano County to a point immediately upstream of the confluence of Yancey Creek, up to the normal pool elevation of 1020 feet (impounds Colorado River)
1409	Colorado River Above Lake Buchanan - from a point immediately upstream of the confluence of Yancey Creek in Burnet/San Saba/Lampasas County to the confluence of the San Saba River in San Saba County
1410	Colorado River Below O. H. Ivie Reservoir - from the confluence of the San Saba River in San Saba County to S. W. Freese Dam in Coleman/Concho County
1411	E. V. Spence Reservoir - from Robert Lee Dam in Coke County to a point immediately upstream of the confluence of Little Silver Creek in Coke County, up to the normal pool elevation of 1898 feet (impounds Colorado River)
1412	Colorado River Below Lake J. B. Thomas - from a point immediately upstream of the confluence of Little Silver Creek in Coke County to Colorado River Dam in Scurry County

SEGMENT	DESCRIPTION
1413	Lake J. B. Thomas - from Colorado River Dam in Scurry County up to the normal pool elevation of 2258 feet (impounds Colorado River)
1414	Pedernales River - from a point immediately upstream of the confluence of Fall Creek in Travis County to FM 385 in Kimble County
1415	Llano River - from a point immediately upstream of the confluence of Honey Creek in Llano County to FM 864 on the North Llano River in Sutton County and to SH 55 on the South Llano River in Edwards County
1416	San Saba River - from the confluence with the Colorado River in San Saba County to the confluence of the North Valley Prong and the Middle Valley Prong in Schleicher County
1417	Lower Pecan Bayou - from the confluence with the Colorado River in Mills County to a point immediately upstream of the confluence of Mackinally Creek in Brown County
1418	Lake Brownwood - from Lake Brownwood Dam in Brown County to a point 100 meters (110 yards) upstream of FM 2559 in Brown County, up to the normal pool elevation of 1424.6 feet (impounds Pecan Bayou)
1419	Lake Coleman - from Coleman Dam in Coleman County up to the normal pool elevation of 1717.5 feet (impounds Jim Ned Creek)
1420	Pecan Bayou Above Lake Brownwood - from a point 100 meters (110 yards) upstream of FM 2559 in Brown County to the confluence of the North Prong Pecan Bayou and the South Prong Pecan Bayou in Callahan County
1421	Concho River - from a point 2.0 km (1.2 miles) upstream of the confluence of Fuzzy Creek in Concho County to San Angelo Dam on the North Concho River in Tom Green County and to Nasworthy Dam on the South Concho River in Tom Green County
1422	Lake Nasworthy - from Nasworthy Dam in Tom Green County to Twin Buttes Dam in Tom Green County, up to the normal pool elevation of 1872.2 feet (impounds South Concho River)
1423	Twin Buttes Reservoir - from Twin Buttes Dam in Tom Green County to a point 100 meters (110 yards) upstream of US 67 on the Middle Concho River Arm in Tom Green County and to a point 4.0 kilometers (2.5 miles) downstream of FM 2335 on the South Concho River Arm in Tom Green County, up to the normal pool elevation of 1940.2 feet (impounds the Middle Concho River and the South Concho River)

SEGMENT	DESCRIPTION
1424	Middle Concho/South Concho River - from a point 4.0 kilometers (2.5 miles) downstream of FM 2335 in Tom Green County to the confluence of Bois D'Arc Draw on the South Concho River in Tom Green County and from a point 100 meters (110 yards) upstream of US 67 in Tom Green County to the confluence of Three Bluff Draw and Indian Creek on the Middle Concho River in Reagan County
1425	O. C. Fisher Lake - from San Angelo Dam in Tom Green County up to the normal pool elevation of 1908 feet (impounds North Concho River)
1426	Colorado River Below E. V. Spence Reservoir - from a point 3.7 km (2.3 miles) below the confluence of Mustang Creek in Runnels County to Robert Lee Dam in Coke County
1427	Onion Creek - from the confluence with the Colorado River in Travis County to the most upstream crossing of FM 165 in Blanco County
1428	Colorado River Below Town Lake - from a point 100 meters (110 yards) upstream of FM 969 near Utley in Bastrop County to Longhorn Dam in Travis County
1429	Town Lake - from Longhorn Dam in Travis County to Tom Miller Dam in Travis County, up to the normal pool elevation of 429 feet (impounds Colorado River)
1430	Barton Creek - from the confluence with Town Lake in Travis County to FM 12 in Hays County
1431	Mid Pecan Bayou - from a point immediately upstream of the confluence of Mackinally Creek in Brown County to a point immediately upstream of Willis Creek in Brown County
1432	Upper Pecan Bayou - from a point immediately upstream of the confluence of Willis Creek in Brown County to Lake Brownwood Dam in Brown County
1433	O. H. Ivie Reservoir - from S. W. Freese Dam in Coleman/Concho County to a point 3.7 km (2.3 miles) downstream of the confluence of Mustang Creek on the Colorado River Arm in Runnels County and to a point 2.0 km (1.2 miles) upstream of the confluence of Fuzzy Creek on the Concho River Arm in Concho County, up to the conservation pool level of 1551.5 feet (impounds Colorado River)
1434	Colorado River Above La Grange - from a point 100 meters (110 yards) downstream of SH 71 at La Grange in Fayette County to a point 100 meters (110 yards) upstream of FM 969 near Utley in Bastrop County

SEGMENT	DESCRIPTION
1501	Tres Palacios Creek Tidal - from the confluence with Tres Palacios Bay in Matagorda County to a point 0.6 kilometer (1.0 mile) upstream of the confluence of Wilson Creek in Matagorda County
1502	Tres Palacios Creek Above Tidal - from a point 0.6 kilometer (1.0 mile) upstream of the confluence of Wilson Creek in Matagorda County to US 59 in Wharton County
1601	Lavaca River Tidal - from the confluence with Lavaca Bay in Calhoun/Jackson County to a point 8.6 kilometers (5.3 miles) downstream of US 59 in Jackson County
1602	Lavaca River Above Tidal - from a point 8.6 kilometers (5.3 miles) downstream of US 59 in Jackson County to a point 5.5 kilometers (3.4 miles) upstream of SH 95 in Lavaca County
1603	Navidad River Tidal - from the confluence with the Lavaca River in Jackson County to Palmetto Bend Dam in Jackson County
1604	Lake Texana - from Palmetto Bend Dam in Jackson County to a point 100 meters (110 yards) downstream of FM 530 in Jackson County, up to the normal pool elevation of 44 feet (impounds Navidad River)
1605	Navidad River Above Lake Texana - from a point 100 meters (110 yards) downstream of FM 530 in Jackson County to the confluence of the East Navidad River and the West Navidad River in Colorado/Lavaca County
1701	Victoria Barge Canal Tidal - from the confluence with San Antonio Bay in Calhoun County to Victoria Turning Basin in Victoria County
1801	Guadalupe River Tidal - from the confluence with Guadalupe Bay in Calhoun/Refugio County to the Guadalupe-Blanco River Authority Salt Water Barrier 0.7 kilometer (0.4 mile) downstream of the confluence of the San Antonio River in Calhoun/Refugio County
1803	Guadalupe River Below San Marcos River - from the Guadalupe-Blanco River Authority Salt Water Barrier 0.7 kilometer (0.4 mile) downstream of the confluence of the San Antonio River in Calhoun/Refugio County to the confluence of the San Marcos River in Gonzales County
1804	Guadalupe River Below Comal River - from the confluence of the San Marcos River in Gonzales County to the confluence of the Comal River in Comal County

SEGMENT	DESCRIPTION
1805	Canyon Lake - from Canyon Dam in Comal County to a point 2.7 kilometers (1.7 miles) downstream of Rebecca Creek Road in Comal County, up to the normal pool elevation of 909 feet (impounds Guadalupe River)
1806	Guadalupe River Above Canyon Lake - from a point 2.7 kilometers (1.7 miles) downstream of Rebecca Creek Road in Comal County to the confluence of the North Fork Guadalupe River and the South Fork Guadalupe River in Kerr County
1807	Coleto Creek - from the confluence with the Guadalupe River in Victoria County to the confluence of Fifteenmile Creek and Twelvemile Creek in Goliad/Victoria County, including Coleto Creek Reservoir
1808	Lower San Marcos River - from the confluence with the Guadalupe River in Gonzales County to a point 1.0 kilometer (0.6 mile) upstream of the confluence of the Blanco River in Hays County
1809	Lower Blanco River - from the confluence with the San Marcos River in Hays County to a point 0.3 kilometer (0.2 mile) upstream of Limekiln Road in Hays County
1810	Plum Creek - from the confluence with the San Marcos River in Caldwell County to FM 2770 in Hays County
1811	Comal River - from the confluence with the Guadalupe River in Comal County to Klingemann Street at New Braunfels in Comal County
1812	Guadalupe River Below Canyon Dam - from the confluence of the Comal River in Comal County to Canyon Dam in Comal County
1813	Upper Blanco River - from a point 0.3 kilometer (0.2 mile) upstream of Limekiln Road in Hays County to the confluence of Meier Creek in Kendall County
1814	Upper San Marcos River - from a point 1.0 kilometer (0.6 miles) upstream of the confluence of the Blanco River in Hays County to a point 0.7 kilometer (0.4 mile) upstream of Loop 82 in San Marcos in Hays County
1815	Cypress Creek - from the confluence with the Blanco River in Hays County to a point 6.4 kilometers (4.0 miles) upstream of the most upstream unnamed county road crossing in Hays County
1816	Johnson Creek - from the confluence with the Guadalupe River in Kerr County to a point 1.2 kilometers (0.7 mile) upstream of the most upstream crossing of SH 41 in Kerr County

SEGMENT	DESCRIPTION
1817	North Fork Guadalupe River - from the confluence with the Guadalupe River in Kerr County to a point 18.2 kilometers (11.3 miles) upstream of Boneyard Draw in Kerr County
1818	South Fork Guadalupe River - from the confluence with the Guadalupe River in Kerr County to a point 4.8 kilometers (3.0 miles) upstream of FM 187 in Kerr County
1901	Lower San Antonio River - from the confluence with the Guadalupe River in Refugio/Victoria County to a point 600 meters (660 yards) downstream of FM 791 at Mays Crossing near Falls City in Karnes County
1902	Lower Cibolo Creek - from the confluence with the San Antonio River in Karnes County to a point 100 meters (110 yards) downstream of IH 10 in Bexar/Guadalupe County
1903	Medina River Below Medina Diversion Lake - from the confluence with the San Antonio River in Bexar County to Medina Diversion Dam in Medina County
1904	Medina Lake - from Medina Lake Dam in Medina County to a point immediately upstream of the confluence of Red Bluff Creek in Bandera County, up to the normal pool elevation of 1064.2 feet (impounds Medina River)
1905	Medina River Above Medina Lake - from a point immediately upstream of the confluence of Red Bluff Creek in Bandera County to the confluence of the North Prong Medina River and the West Prong Medina River in Bandera County
1906	Lower Leon Creek - from the confluence with the Medina River in Bexar County to a point 100 meters (110 yards) upstream of SH 16 northwest of San Antonio in Bexar County
1907	Upper Leon Creek - from a point 100 meters (110 yards) upstream of SH 16 northwest of San Antonio in Bexar County to a point 9.0 kilometers (5.6 miles) upstream of Scenic Loop Road north of Helotes in Bexar County
1908	Upper Cibolo Creek - from the Missouri-Pacific Railroad bridge west of Bracken in Comal County to a point 1.5 kilometers (0.9 mile) upstream of the confluence of Champee Springs in Kendall County
1909	Medina Diversion Lake - from Medina Diversion Dam in Medina County to Medina Lake Dam in Medina County, up to the normal pool elevation of 926.5 feet (impounds Medina River)

SEGMENT	DESCRIPTION
1910	Salado Creek - from the confluence with the San Antonio River in Bexar County to Rocking Horse Lane west of Camp Bullis in Bexar County
1911	Upper San Antonio River - from a point 600 meters (660 yards) downstream of FM 791 at Mays Crossing near Falls City in Karnes County to a point 100 meters (110 yards) upstream of Hildebrand Avenue at San Antonio in Bexar County
1912	Medio Creek - from the confluence with the Medina River in Bexar County to a point 1.0 kilometer (0.6 mile) upstream of IH 35 at San Antonio in Bexar County
1913	Mid Cibolo Creek - from a point 100 meters (110 yards) downstream of IH 10 in Bexar/Guadalupe County to the Missouri-Pacific Railroad bridge west of Bracken in Comal County
2001	Mission River Tidal - from the confluence with Mission Bay in Refugio County to a point 7.4 kilometers (4.6 miles) downstream of US 77 in Refugio County
2002	Mission River Above Tidal - from a point 7.4 kilometers (4.6 miles) downstream of US 77 in Refugio County to the confluence of Blanco Creek and Medio Creek in Refugio County
2003	Aransas River Tidal - from the confluence with Copano Bay in Aransas/Refugio County to a point 5.3 kilometers (3.3 miles) upstream of Chiltipin Creek in Refugio/San Patricio County
2004	Aransas River Above Tidal - from a point 5.3 kilometers (3.3 miles) upstream of Chiltipin Creek in Refugio/San Patricio County to the confluence of Poesta Creek and Aransas Creek in Bee County
2101	Nueces River Tidal - from the confluence with Nueces Bay in Nueces County to Calallen Dam 1.7 kilometers (1.1 miles) upstream of US 77/IH 37 in Nueces/San Patricio County
2102	Nueces River Below Lake Corpus Christi - from Calallen Dam 1.7 kilometers (1.1 miles) upstream of US 77/IH 37 in Nueces/San Patricio County to Wesley E. Seale Dam in Jim Wells/San Patricio County
2103	Lake Corpus Christi - from Wesley E. Seale Dam in Jim Wells/San Patricio County to a point 100 meters (110 yards) upstream of US 59 in Live Oak County, up to the normal pool elevation of 94.0 feet (impounds Nueces River)

SEGMENT	DESCRIPTION
2104	Nueces River Above Frio River - from the confluence of the Frio River in Live Oak County to Holland Dam in LaSalle County
2105	Nueces River Above Holland Dam - from Holland Dam in LaSalle County to a point 100 meters (110 yards) upstream of FM 1025 in Zavala County
2106	Nueces/Lower Frio River - from a point 100 meters (110 yards) upstream of US 59 in Live Oak County to Choke Canyon Dam in Live Oak County
2107	Atascosa River - from the confluence with the Frio River in Live Oak County to the confluence of the West Prong Atascosa River and the North Prong Atascosa River in Atascosa County
2108	San Miguel Creek - from a point immediately upstream of the confluence of Mustang Branch in McMullen County to the confluence of San Francisco Perez Creek and Chacon Creek in Frio County
2109	Leona River - from the confluence with the Frio River in Frio County to US 83 in Uvalde County
2110	Lower Sabinal River - from the confluence with the Frio River in Uvalde County to a point 100 meters (110 yards) upstream of SH 127 in Uvalde County
2111	Upper Sabinal River - from a point 100 meters (110 yards) upstream of SH 127 in Uvalde County to the most upstream crossing of FM 187 in Bandera County
2112	Upper Nueces River - from a point 100 meters (110 yards) upstream of FM 1025 in Zavala County to the confluence of the East Prong Nueces River and Hackberry Creek in Edwards County
2113	Upper Frio River - from a point 100 meters (110 yards) upstream of US 90 in Uvalde County to the confluence of the West Frio River and the East Frio River in Real County
2114	Hondo Creek - from the confluence with the Frio River in Frio County to FM 470 in Bandera County
2115	Seco Creek - from the confluence with Hondo Creek in Frio County to the confluence of West Seco Creek in Bandera County
2116	Choke Canyon Reservoir - from Choke Canyon Dam in Live Oak County to a point 4.2 kilometers (2.6 miles) downstream of SH 16 on the Frio River Arm in McMullen

SEGMENT	DESCRIPTION

County and to a point 100 meters (110 yards) upstream of the confluence of Mustang Branch on the San Miguel Creek Arm in McMullen County, up to the normal pool elevation of 220.5 feet (impounds Frio River)

2117 Frio River Above Choke Canyon Reservoir - from a point 4.2 kilometers (2.6 miles) downstream of SH 16 in McMullen County to a point 100 meters (110 yards) upstream of US 90 in Uvalde County

2201 Arroyo Colorado Tidal - from the confluence with Laguna Madre in Cameron/Willacy County to a point 100 meters (110 yards) downstream of Cemetery Road south of Port Harlingen in Cameron County

2202 Arroyo Colorado Above Tidal - from a point 100 meters (110 yards) downstream of Cemetery Road south of Port Harlingen in Cameron County to FM 2062 in Hidalgo County

2203 Petronila Creek Tidal - from the confluence of Chiltipin Creek in Kleberg County to a point 1 kilometer (0.6 mile) upstream of private road crossing near Laureles Ranch in Kleberg County

2204 Petronila Creek Above Tidal - from a point 1 kilometer (0.6 mile) upstream of private road crossing near Laureles Ranch in Kleberg County to the confluence of Agua Dulce and Banquete Creeks in Nueces County

2301 Rio Grande Tidal - from the confluence with the Gulf of Mexico in Cameron County to a point 10.8 kilometers (6.7 miles) downstream of the International Bridge in Cameron County

2302 Rio Grande Below Falcon Reservoir - from a point 10.8 kilometers (6.7 miles) downstream of the International Bridge in Cameron County to Falcon Dam in Starr County

2303 International Falcon Reservoir - from Falcon Dam in Starr County to the confluence of the Arroyo Salado (Mexico) in Zapata County, up to the normal pool elevation of 301.1 feet (impounds Rio Grande)

2304 Rio Grande Below Amistad Reservoir - from the confluence of the Arroyo Salado (Mexico) in Zapata County to Amistad Dam in Val Verde County

2305 International Amistad Reservoir - from Amistad Dam in Val Verde County to a point 1.8 kilometers (1.1 miles) downstream of the confluence of Ramsey Canyon on the Rio Grande Arm in Val Verde County and to a point 0.7 kilometer (0.4 mile) downstream

SEGMENT	DESCRIPTION

of the confluence of Painted Canyon on the Pecos River Arm in Val Verde County and to a point 0.6 kilometer (0.4 mile) downstream of the confluence of Little Satan Creek on the Devils River Arm in Val Verde County, up to the normal pool elevation of 1117 feet (impounds Rio Grande)

2306 Rio Grande Above Amistad Reservoir - from a point 1.8 kilometers (1.1 miles) downstream of the confluence of Ramsey Canyon in Val Verde County to the confluence of the Rio Conchos (Mexico) in Presidio County

2307 Rio Grande Below Riverside Diversion Dam - from the confluence of the Rio Conchos (Mexico) in Presidio County to Riverside Diversion Dam in El Paso County

2308 Rio Grande Below International Dam - from the Riverside Diversion Dam in El Paso County to International Dam in El Paso County

2309 Devils River - from a point 0.6 kilometer (0.4 mile) downstream of the confluence of Little Satan Creek in Val Verde County to the confluence of Dry Devils River in Sutton County

2310 Lower Pecos River - from a point 0.7 kilometer (0.4 mile) downstream of the confluence of Painted Canyon in Val Verde County to a point immediately upstream of the confluence of Independence Creek in Crockett/Terrell County

2311 Upper Pecos River - from a point immediately upstream of the confluence of Independence Creek in Crockett/Terrell County to Red Bluff Dam in Loving/Reeves County

2312 Red Bluff Reservoir - from Red Bluff Dam in Loving/Reeves County to the New Mexico State Line in Loving/Reeves County, up to the normal pool elevation of 2842 feet (impounds Pecos River)

2313 San Felipe Creek - from the confluence with the Rio Grande in Val Verde County to a point 4.0 kilometers (2.5 miles) upstream of US 90 in Val Verde County

2314 Rio Grande Above International Dam - from International Dam in El Paso County to the New Mexico State Line in El Paso County

2411 Sabine Pass - from the end of the jetties at the Gulf of Mexico to SH 82

2412 Sabine Lake

2421 Upper Galveston Bay

SEGMENT	DESCRIPTION
2422	Trinity Bay
2423	East Bay
2424	West Bay
2425	Clear Lake
2426	Tabbs Bay
2427	San Jacinto Bay
2428	Black Duck Bay
2429	Scott Bay
2430	Burnett Bay
2431	Moses Lake
2432	Chocolate Bay
2433	Bastrop Bay/Oyster Lake
2434	Christmas Bay
2435	Drum Bay
2436	Barbours Cut
2437	Texas City Ship Channel
2438	Bayport Channel
2439	Lower Galveston Bay
2441	East Matagorda Bay
2442	Cedar Lakes
2451	Matagorda Bay/Powderhorn Lake
2452	Tres Palacios Bay/Turtle Bay
2453	Lavaca Bay/Chocolate Bay

SEGMENT	DESCRIPTION
2454	Cox Bay
2455	Keller Bay
2456	Carancahua Bay
2461	Espiritu Santo Bay
2462	San Antonio Bay/Hynes Bay/Guadalupe Bay
2463	Mesquite Bay/Carlos Bay/Ayres Bay
2471	Aransas Bay
2472	Copano Bay/Port Bay/Mission Bay
2473	St. Charles Bay
2481	Corpus Christi Bay
2482	Nueces Bay
2483	Redfish Bay
2484	Corpus Christi Inner Harbor - from US 181 to Viola Turning Basin
2485	Oso Bay
2491	Laguna Madre
2492	Baffin Bay/Alazan Bay/Cayo del Grullo/Laguna Salada
2493	South Bay
2494	Brownsville Ship Channel
2501	Gulf of Mexico - from the Gulf shoreline to the limit of Texas' jurisdiction between Sabine Pass and Brazos Santiago Pass

Appendix D - Site-specific Receiving Water Assessments

The water bodies listed in this appendix are those waters that are not designated segments listed in Appendix A of this title. The water bodies are included because a regulatory action has been taken or is anticipated to be taken by the commission or because sufficient information exists to provide an aquatic life use designation. The segment numbers listed refer to the designated segments as defined in Appendix C of this title. The county listed is the primary location where the use designation has been assigned. The water body is a tributary within the drainage basin of the listed segment. The aquatic life use (ALU) designations and dissolved oxygen (D.O.) criterion are the same as defined in §307.3(b) and §307.7(b)(3)(A) of this title. The description defines the specific area for which the aquatic life use designation pertains. Contact recreation uses are assigned to all of the waters listed. Generally, there is not sufficient data on these waters to develop other conventional criteria and those criteria are the same as for the segment in which the water body is located unless further site-specific information is obtained.

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
0101	Hutchinson	Rock Creek	L	3.0	Perennial stream from the confluence with the Canadian River up to SH 136 in the City of Borger
0201	Bowie	Jones Creek	I	4.0	Intermittent stream with perennial pools from the confluence with Barkman Creek up to the western most crossing of FM 1398 near Hooks
0202	Grayson	Corneliason Creek	L	3.0	Intermittent stream with perennial pools from the confluence with Mill Creek up to FM 1897 in Bells
0204	Montague	Ritchie Creek	L	3.0	Intermittent stream with perennial pools from the confluence with Salt Creek up to SH 59 east of Montague
0302	Bowie	Big Creek	I	4.0	Intermittent stream with perennial pools from FM 2149 up to 1.3 km south of U.S. 82 south-east of New Boston
0304	Bowie	Wagner Creek	I	4.0	Perennial stream from the confluence with Days Creek to a point 1.5 km upstream of IH 30
0400	Harrison	Cross Bayou	H	5.0	Perennial stream from the Texas/Louisiana border upstream to headwaters approximately 0.2 km south of the cemetery at Stricklen Springs
0402	Marion	Black Cypress Bayou	I	4.0	Perennial stream from the confluence with Big Cypress in Marion County up to FM 250 in Cass County
0404	Morris	Brutons Creek	I	4.0	Perennial stream from the headwaters of Ellison Reservoir to SH 49 near Daingerfield
0404	Titus	Hart Creek	H	5.0	Perennial stream from the confluence with Big Cypress Creek upstream to 0.2 km upstream of FM 1402
0501	Orange	County Relief Ditch	L	3.0	Perennial ditch from the confluence with the Sabine River upstream to Highway 87
0503	Newton	Unnamed tributary of Dempsey Creek	I	4.0	Perennial stream from the confluence with Dempsey Creek to headwater swamp near Bon Weir
0504	Shelby	Unnamed tributary of Flat Fork Creek	L	3.0	Intermittent stream with perennial pools from the confluence of an unnamed tributary 1.0 km upstream of FM 1645 upstream to 0.4 km upstream of SH 87

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
0505	Gregg	Grace Creek	I	4.0	Perennial stream from the confluence with the Sabine River up to FM 1844 in Gregg County
0505	Gregg	Hawkins Creek	L	3.0	Perennial stream from confluence with the Sabine River upstream to FM 2605 in White Oak
0505	Gregg	Rabbit Creek	I	4.0	Perennial stream from the confluence with the Sabine River in Gregg County up to the confluence with Little Rabbit Creek in Rusk County
0505	Harrison	Eightmile Creek	I	4.0[1]	Perennial stream from the confluence with the Sabine River up to SH 31
0505	Harrison	Mason Creek	L	3.0	Intermittent stream with perennial pools from confluence with swamp 3.1 km downstream of IH 20 up to 0.2 km above IH 20 near intersection with FM 968
0505	Harrison	Wards Creek	I	4.0	Perennial stream from the confluence with the Sabine River in Rusk County upstream to Highway 80 in Harrison County
0505	Rusk	Unnamed tributary of Sabine River	I	4.0	Perennial stream from confluence with the Sabine River up to 0.7 km above Santa Fe railroad crossing in Easton
0506	Rains	Sandy Creek	L	3.0	Perennial stream from confluence of Glade Creek up to confluence of unnamed tributary 0.3 km below SH 19
0507	Hunt	West Caddo Creek	L	3.0	Intermittent stream with perennial pools from confluence with Brushy Creek up to confluence of Middle Caddo Creek northwest of Caddo Mills
0511	Orange	Coon Bayou	H	4.0	From the confluence with Cow Bayou up to the extent of tidal limits
0511	Orange	Unnamed tributary of Cow Bayou	H	4.0	From the confluence with Cow Bayou (north bank approximately 1.6 km from the Sabine River confluence) up to the extent of tidal limits
0601	Orange	Tiger Creek	L	3.0	Perennial stream from the confluence with Meyer Bayou to the confluence of Caney Creek near Vidor
0602	Hardin	Unnamed tributary (Booger Branch) of Massey Lake Slough	L	3.0	Perennial stream from Massey Lake Slough up to the Santa Fe railroad crossing south of Silsbee

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
0603	Jasper	Sandy Creek	H	5.0	Perennial stream from the confluence with B. A. Steinhagen Lake up to 0.5 km below FM 766 east of Jasper
0604	Angelina	Hurricane Creek	I	4.0	Perennial stream from the confluence with Cedar Creek to the confluence of two unnamed tributaries 100 meters upstream of SH Loop 287 in Lufkin
0604	Cherokee	Alto Branch	L	3.0	Perennial stream from the confluence of Larrison Creek up to FM 851 north of Alto
0604	Cherokee	Larrison Creek	L	3.0	Perennial stream from U.S. 69 southeast of Alto up to 1.0 km above SH 21 east of Alto
0604	Cherokee	One-Eye Creek	I	4.0	Perennial stream from the confluence with McCann Creek upstream to the confluence with College Creek
0604	Polk	Dabbs Creek	H	5.0	Perennial stream from the confluence of Caney Creek up to the confluence of Dabbs Branch approximately 4.5 kilometers above FM 942 in Polk County
0606	Smith	Black Fork Creek	H	5.0[2]	Perennial stream from the confluence with Prairie Creek to a point 0.4 km downstream of FM 14 in Tyler
0606	Smith	Black Fork Creek	L	3.0	Intermittent stream with perennial pools from a point 0.4 km downstream of FM 14 to a point 0.2 km upstream of SH 31 in Tyler
0606	Smith	Prairie Creek	H	5.0[3]	Perennial stream from the confluence with the Neches River to a point immediately upstream of the confluence of Caney Creek
0608	Hardin	Cypress Creek	H	5.0	Perennial stream from the confluence with Village Creek up to the confluence of Bad Luck Creek
0608	Tyler	Turkey Creek	H	5.0	Perennial stream from the confluence with Village Creek up to 1.6 km above U.S. 69 north of Woodville
0610	Angelina	Mill Creek	H	5.0	Perennial stream from the confluence with Paper Mill Creek up to 1.0 km upstream of FM 2251 north of the City of Lufkin
0610	Angelina	Unnamed tributary of Mill Creek	L	3.0	Intermittent stream with perennial pools from the confluence with Mill Creek up to 1.0 km above FM 2251 north of Lufkin

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
0610	Sabine	Little Sandy Creek	I	4.0	Intermittent stream with perennial pools from the confluence with Pomponaugh Creek up to 0.5 km above FM 83 north of Pineland
0611	Cherokee	Keys Creek	H	5.0	Perennial stream from the confluence with Mud Creek upstream to the confluence of Barber Branch east of Jacksonville
0611	Cherokee	Mud Creek	H	5.0	Perennial stream from the confluence with the Angelina River to a point immediately upstream of the confluence of Caney Creek in Cherokee County
0611	Cherokee	Ragsdale Creek	I	4.0	Perennial stream from the confluence with Keys Creek to the confluence of an unnamed tributary 250 meters upstream of Canada Street in Jacksonville
0611	Nacogdoches	Bayou LaNana	I	4.0	Perennial stream from the confluence with the Angelina River up to FM 1878 in the City of Nacogdoches
0611	Rusk	Unnamed tributary of Johnson Creek	L	3.0	Perennial stream from the confluence with Johnson Creek up to 2.4 km upstream of the confluence, which is 0.8 km south of SH 64 west of Joinerville
0611	Smith	Blackhawk Creek	I	4.0	Perennial stream from the confluence with Mud Creek to the confluence of an unnamed tributary 120 meters upstream of SH 110 south of Whitehouse
0611	Smith	West Mud Creek	L	3.0	Perennial stream from the confluence with Mud Creek in Cherokee County to the confluence of an unnamed tributary 300 meters upstream of the most northern crossing of US 69 (approximately 2.25 km south of the intersection of Loop 323) in Tyler
0701	Jefferson	Rodair Gully	I	4.0	Perennial stream from the confluence with Taylor Bayou up to U.S. 69 near Nederland
0702	Jefferson	Main Canal D, Canal A, Canal B, Canal C	I	4.0	All perennial canals in Jefferson County Drainage District No. 7 that eventually drain into the tidal portion of Taylor Bayou at the pumphouse gate
0802	San Jacinto	Unnamed tributary of Coley Creek	H	5.0	Perennial stream from the confluence with Coley Creek upstream to its origin at the culvert leading from Lake Run-Amuck at Wright Road
0804	Anderson	Keechi Creek	H	5.0	Perennial stream from the confluence with the Trinity River to a point 0.05 km upstream of FM 645

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
0804	Leon	Toms Creek	H	5.0	Perennial stream from the confluence with the Trinity River to the Missouri Pacific Railroad crossing near Oakwood
0804	Leon	Unnamed tributary (Northwest Branch)	H	5.0	Perennial stream from the confluence with Toms Creek to a point 0.3 km upstream of FM 831
0819	Dallas	Duck Creek	I	4.0	Perennial stream from the confluence with the East Fork Trinity River in Kaufman County to the confluence of an unnamed tributary 0.6 km upstream of Jupiter Road in Dallas County
0819	Rockwall	Buffalo Creek	L	3.0	Perennial stream from the confluence with the East Fork Trinity River up to 0.6 km above the confluence of Little Buffalo Creek
0820	Collin	Cottonwood Creek	L	3.0	Perennial stream from the confluence with Rowlett Creek up to SH 5 (near Greenville Road)
0820	Collin	Rowlett Creek	I	4.0	Perennial stream from the normal pool elevation of 435.5 feet of Lake Ray Hubbard to the Parker Road crossing
0821	Collin	Pilot Grove Creek	L	3.0	Perennial stream from confluence of Desert Creek up to FM 121 near Blue Ridge
0823	Grayson	Little Elm Creek	I	4.0	Perennial stream from FM 455 in Collin County up to 1.4 km above FM 121 in Grayson County near Gunther
0826	Denton	Denton Creek	H	5.0	Perennial stream from the headwaters of Grapevine Lake to the confluence of Trail Creek near Justin
0826	Denton	Trail Creek	H	5.0	Perennial stream from the confluence with Denton Creek up to 2.1 km upstream of SH 156 in Justin
1001	Harris	Bear Lake	H	4.0	Encompasses the entire tidal portion of the bay (tributary bay of San Jacinto River Tidal)
1006	Harris	Carpenters Bayou	I	4.0	Perennial stream from 9.0 km upstream of Houston Ship Channel up to 0.8 km upstream of Wallisville Road
1006	Harris	Carpenters Bayou	L	3.0	Perennial stream from 0.8 km upstream of Wallisville Road up to Sheldon Reservoir

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
1006	Harris	Halls Bayou	I	4.0	Perennial stream from the confluence with Greens Bayou up to US 59
1006	Harris	Halls Bayou	L	3.0	Perennial stream from US 59 upstream to Frick Road
1007	Harris	Berry Bayou Above Tidal	L	3.0	Perennial stream from 2.4 km upstream from the confluence with Sims Bayou to the southern city limits of South Houston
1007	Harris	Brays Bayou Above Tidal	L	3.0	Perennial stream from 11.5 km upstream from confluence with Houston Ship Channel up to SH 6
1007	Harris	Keegans Bayou	L	3.0	Perennial stream from confluence with Brays Bayou upstream to Harris Co. line
1007	Harris	Sims Bayou Above Tidal	L	3.0	Perennial stream from 11.0 km upstream of confluence with Houston Ship Channel upstream to Hiram Clark Drive
1007	Harris	Willow Waterhole Bayou	L	3.0	Perennial stream from confluence with Brays Bayou upstream to South Garden (in Missouri City)
1008	Harris	Metzler Creek	L	3.0	Intermittent stream with perennial pools from the confluence of Cannon Gully up to 0.2 km below Kuykendahl Road
1013	Harris	Little Whiteoak Bayou	I	4.0	Perennial stream from the confluence with Whiteoak Bayou up to RR tracks north of IH 610
1013	Harris	Little Whiteoak Bayou	L	3.0	Perennial stream from RR tracks north of IH 610 upstream to Yale Street
1014	Harris	Bear Creek	I	4.0	Perennial stream from Addicks Reservoir upstream to Longenbaugh Road
1014	Harris	Dinner Creek	L	3.0	Perennial stream from the confluence with Langham Creek upstream to Frey Road
1014	Harris	Horsepen Creek	L	3.0	Perennial stream from Addicks Reservoir up to 2.4 km upstream of SH 6
1014	Harris	Langham Creek	L	3.0	Perennial stream from Addicks Reservoir upstream to FM 529
1014	Harris	Mason Creek	I	4.0	Perennial stream from Barker Reservoir upstream to the confluence with unnamed tributary south of IH 10
1014	Harris	South Mayde Creek	L	3.0	Perennial stream from Addicks Reservoir up to FM 529

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
1014	Waller	Willow Fork Buffalo Bayou	I	4.0	Intermittent stream with perennial pools from the confluence with Buffalo Bayou in Fort Bend County up to 1.0 km above U.S. 90 in Waller County
1016	Harris	Garners Bayou	L	3.0	Perennial stream from the confluence with Williams Gully upstream to 1.5 km north of Atoscocita Road
1017	Harris	Brickhouse Gully/Bayou	L	3.0	Perennial stream from the confluence with Whiteoak Bayou up to Gessner Road
1017	Harris	Cole Creek	L	3.0	Perennial stream from the confluence with Whiteoak Bayou up to Flintlock Street
1017	Harris	Vogel Creek	L	3.0	Perennial stream from the confluence with Whiteoak Bayou to a point 3.2 kilometers upstream of the confluence with Whiteoak Bayou
1102	Brazoria	Cowart Creek	L	3.0	Intermittent stream with perennial pools from the confluence with Clear Creek in Galveston County to SH 35 in Brazoria County
1202	Fort Bend	Rabbs Bayou	L	3.0	Perennial stream from the confluence with an unnamed tributary below HW 59 up to Smithers Lake
1202	Waller	Brookshire Creek	L	3.0	Perennial stream from the confluence of an unnamed tributary located 1.4 km downstream of IH 10 to 500 meters upstream of US 90
1202	Washington	Hog Branch	I	4.0	Perennial stream from the confluence with Little Sandy Creek upstream to Loop 318 in the City of Brenham
1202	Washington	Little Sandy Creek	I	4.0	Perennial stream from the confluence with New Year Creek to a point 100 meters upstream of Loop 283
1202	Washington	New Year Creek	I	4.0	Perennial stream from the confluence with Ralston Creek upstream to the confluence of Big Sandy Creek
1203	Bosque	Steele Creek	H	5.0	Perennial stream from the confluence with Whitney Lake up to 2.4 km above the confluence of Cox Branch
1205	Hood	McCarty Branch	L	3.0	Intermittent stream with perennial pools from the confluence with Lake Granbury up to FM 208

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
1209	Brazos	Carters Creek	I	4.0	Perennial stream from the confluence with the Navasota River upstream to the confluence of an unnamed tributary 0.5 km upstream of FM 158
1209	Brazos	Wolfpen Creek	L	3.0	Intermittent stream with perennial pools from the confluence with Carter Creek to near Bizzell Street in College Station
1211	Burleson	Davidson Creek	I	4.0	Intermittent stream with perennial pools from the confluence with Yegua Creek to 0.2 km above SH 21 near Caldwell
1217	Lampasas	Sulphur Creek	H	5.0	Perennial stream from the confluence with the Lampasas River to the spring source located in Lampasas
1224	Eastland	Leon River Above Leon Reservoir	H	5.0	From the headwaters of Leon Reservoir up to the confluence of the North Fork Leon River and the South Fork Leon River (includes Lake Olden)
1224	Eastland	South Fork Leon River	H	5.0	From the confluence of the North Fork Leon River up to the confluence of the Middle Fork Leon River
1227	Johnson	Buffalo Creek	L	3.0	Intermittent stream from the confluence with the Nolan River up to the confluence of East Buffalo Creek and West Buffalo Creek
1227	Johnson	Mustang Creek	I	4.0	Intermittent stream with perennial pools from the confluence with Nolan River to FM 916 near Rio Vista
1241	Lubbock	North Fork Double Mountain Fork Brazos River	L	3.0	Perennial stream from the confluence with Double Mountain Fork Brazos River to the dam forming Lake Ransom Canyon
1242	Brazos	Cottonwood Branch	I	4.0	Intermittent stream with perennial pools from the confluence with Still Creek upstream 0.95 km to the confluence with an unnamed tributary
1242	Brazos	Still Creek	H	5.0	Perennial stream from the confluence with Thompsons Creek upstream to the confluence with Cottonwood Branch
1242	Brazos	Unnamed tributary of Cottonwood Branch	I	4.0	Intermittent stream with perennial pools from the confluence with Cottonwood Branch upstream to the headwaters
1242	Falls	Pond Creek	L	3.0	Perennial stream from the confluence with the Brazos River in Milam County, up to the confluence with Live Oak Creek in Falls County

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
1242	McLennan	Tradinghouse Reservoir	H	5.0	Encompasses the entire reservoir up to the normal pool elevation of 447 feet
1242	Robertson	Little Brazos River	H	5.0	Perennial stream from the confluence with the Brazos River in Brazos County to the confluence of Walnut Creek in Robertson County west of Calvert
1244	Williamson	Brushy Creek	I	4.0	Perennial stream from the confluence of South Brushy Creek to the confluence of North Fork Brushy Creek and South Fork Brushy Creek
1244	Williamson	Mustang Creek	I	4.0	Perennial stream from the confluence with Brushy Creek upstream to the confluence of North Fork Mustang Creek
1245	Fort Bend	Red Gully	I	4.0	Perennial stream from the confluence with Oyster Creek up to 1.7 km upstream of Old Richmond Road
1246	McLennan	Unnamed tributary of South Bosque River	I	4.0	Perennial stream from the confluence with the South Bosque River to 1.0 km above SH 317 south of McGregor (locally known as Sheep Creek)
1248	Williamson	Berry Creek	H	5.0	Perennial stream from the confluence with the San Gabriel River to the confluence of Stapp Branch southwest of Florence
1304	Matagorda	Linnville Bayou	L	3.0	Intermittent stream with perennial pools from a point 1.1 km above the confluence with Caney Creek in Matagorda County up to a point 0.1 km above SH 35 in Brazoria/Matagorda counties
1402	Fayette	Cedar Creek Reservoir	H	5.0	Encompasses the entire reservoir up to the normal pool elevation of 391 feet
1402	Fayette	Cedar Creek	H	5.0	Perennial stream from the confluence with the Colorado River up to the dam forming Cedar Creek Reservoir
1412	Howard	Beals Creek	L	3.0	Intermittent stream with perennial pools from the confluence with the Colorado River in Mitchell County up to the confluence of Mustang Draw and Sulphur Draw in Howard County
1414	Gillespie	Barons Creek	H	5.0	Perennial stream from the confluence with the Pedernales River up to the most northern crossing of US 87 northwest of Fredericksburg
1415	Kimble	Johnson Fork Creek	H	5.0	Perennial stream from the confluence with the Llano River to source springs (Rio Bonito Springs) south of Segovia

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
1415	Mason	Comanche Creek	L	3.0	Intermittent stream with perennial pools from the confluence with the Llano River up to the confluence of West Comanche Creek near Mason
1416	McCulloch	Brady Creek	I	4.0	Perennial stream and intermittent stream with perennial pools from confluence of unnamed tributary approximately 5.0 km east of FM 2309 east of Brady to Brady Lake dam
1420	Callahan	Kaiser Creek	L	3.0	Intermittent stream with perennial pools from the confluence with North Prong Pecan Bayou up to 0.5 km upstream of FM 2700 south of Clyde
1420	Callahan	Turkey Creek	H	5.0	From the confluence with Pecan Bayou in Brown County up to SH 36 in Callahan County
1426	Runnels	Elm Creek	H	5.0	Perennial stream from the confluence with the Colorado River up to dam approximately 300 meters downstream of U.S. Highway 67
1427	Travis	Slaughter Creek	H	5.0	Intermittent stream with perennial pools from the confluence with Onion Creek to above US 290 west of Austin
1428	Travis	Gilleland Creek	H	5.0	Perennial stream and intermittent stream with perennial pools from the confluence with the Colorado River up to the spring source (Ward Spring) northwest of Pflugerville
1602	Lavaca	Rocky Creek	H	5.0	Perennial stream from the confluence with the Lavaca River up to 1.0 km above FM 533 west of Shiner
1902	Bexar	Martinez Creek	I	4.0	Perennial stream from Binz-Engleman Road up to the confluence with Escondido Creek
1903	Medina	Polecat Creek	H	5.0	Perennial stream from 6.4 km above confluence with the Medina River to the spring source 1.3 km above FM 2790 southeast of LaCoste
2108	Medina	Chacon Creek	I	4.0	Perennial stream from the confluence with San Francisco Perez Creek in Frio County upstream to the confluence of an unnamed tributary approximately 0.8 km north of SH 132 in Medina County

SEGMENT	COUNTY	WATER BODY	ALU	D.O.	DESCRIPTION
2108	Medina	Fort Ewell Creek	I	4.0	Perennial stream from the confluence with Chacon Creek in Medina County upstream to the confluence of the Natalia Canal approximately 0.8 km north of SH 132 in Medina County
2304	Val Verde	Cienegas Creek	H	5.0	Perennial stream from the confluence with the Rio Grande to the headwater spring source (Cienegas Springs) approximately 0.8 km north of Cienega Lane west of Del Rio
2310	Terrell	Independence Creek	E	6.0	Perennial stream from the confluence of the Pecos River to the mouth of Surveyor Canyon (upstream of FM 2400)
2425	Harris	Taylor Lake	H	4.0	Encompasses the entire tidal portion of the bay (tributary bay of Clear Lake)
2426	Harris	Goose Creek	I	4.0	Perennial stream from Baker Street up to the confluence of an unnamed tributary from Highlands Reservoir
2426	Harris	Goose Creek	L	3.0	Perennial stream from the confluence of East Fork Goose Creek up to Baker Street

[1] A site-specific dissolved oxygen criterion of 3.0 mg/L as a 24-hour average applies for the months of June through October.
[2] A site-specific dissolved oxygen criterion of 4.0 mg/L as a 24-hour average applies for the months of May through October.
[3] A site-specific dissolved oxygen criterion of 3.0 mg/L as a 24-hour average applies for the months of May through October.

Appendix E - Site-specific Criteria

The waterbodies listed in this appendix are those waters which now have a site-specific standard for the chemical parameter listed. These changes were initiated by one or more permitted facilities discharging to the waterbody cited. The procedures for obtaining a site-specific standard are specified in §307.2(d). The values and equations shown in the table are not to be interpreted as the values that are to appear in the final discharge permit. These values and equations replace the criteria found in Table 1 that are normally used to calculate discharge limits. The values and equations in Appendix E are to be used in computing discharge limits in accordance with the current procedures for *Implementation of the Texas Natural Resource Conservation Commission Standards Via Permitting*.

Summary of Site-Specific Criteria

PARAMETER	WATER EFFECT RATIO	SITE SPECIFIC STANDARD (µg/L) Acute/Chronic	SITE DESCRIPTION
Copper[1]	4.58	44.8 31.3	Ragsdale Creek and its tributaries in Segment 0611 in Cherokee County
Copper[2]	4.26	34.5 25.0	One-Eye Creek and its tributaries in Segment 0604 in Cherokee County
Copper[3]	5.15	21.7 16.7	Johnson Creek Reservoir in Segment 0403 in Marion County
Lead[4]	N/A	$e^{(1.273(\ln H) - 0.9744)}$ $e^{(1.273(\ln H) - 2.958)}$	All of Segment 0404: Big Cypress Creek

1 Calculated with site-specifc hardness value of 48 mg/L.
2 Calculated with site-specifc hardness value of 40 mg/L.
3 Calculated with site-specific hardness value of 20 mg/L. TNRCC has also accepted site-specific TSS of 4 mg/L and partitioning coefficient of 77%.
4 Calculated with site-specific hardness value (H) of 40.1 mg/L.

Adopted March 19, 1997 Effective April 30, 1997